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1 February 1983

CHINA REPORT

AGRICULTURE

No. 248

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I. GENERAL INFORMATION

MORE RATIONAL GEOGRAPHICAL DISTRIBUTION OF COTTON URGED

Beijing NONGYE BUJU YU [QIHUA AGRICULTURAL DISTRIBUTION AND ZONING]
in Chinese Mar 82 pp 215-220

[Article by Xu Peixiu [1776 1014 4423] of Institute of Geography, Chinese Academy of Sciences: "On Appropriate Concentration and Rational Distribution of Cotton Production in China"]

[Excerpts] Cotton is China's most important cash crop, an important means of livelihood for the people, and an important strategic material for the country. Since the founding of the People's Republic, under the leadership of the party and the government, China's cotton production experienced tremendous development, basically meeting popular, military and industrial needs. In the recent decade, however, due to disruption by Lin Biao and the gang of four and natural disasters, cotton production has been stagnating, becoming a weak link in agriculture. Cotton yield must be raised substantially to meet the needs of high-speed economic growth in the new period. In addition to correctly implementing economic policies and improving production technology as ways to increase production, an important question is the appropriate concentration and rational distribution of cotton land.

A number of cotton producing regions have brought about varying degrees of concentration and rational distribution in recent years. Practice proves that there are many advantages to appropriate concentration. It facilitates better leadership and management, scientific cultivation, and mechanization and modernization. It helps raise labor productivity and lower production cost to achieve great increases in yield and commodity rate.

China is one of the world's largest cotton producers. Its cotton fields totaled 74 million mu in 1973, second only to India (115 million mu) and ranking second in the world. That year China's total cotton output was 51 million dan, second only to the United States (56.5 million dan) and ranking second in the world. The average yield per mu, however, was only 69 jin, ranking seventh in the world (after the USSR, Egypt, Turkey, Mexico, Iran and the United States). Because of a huge population, China's sizable cotton output came to just 5 jin per capita, obviously not enough to meet the needs of economic growth.

Overall distribution of cotton fields at present: Cotton fields are distributed over wide areas. While there are many concentrated regions, there are

also a great number of scattered fields. In distribution scope, cotton is planted over wide areas in northern latitudes 25° - 45° , and eastern longitudes 76° - 124° . There are over 1200 cotton producing counties, over 700 of which growing less than 50,000 mu, totaling 10 million mu. These counties rarely or do not supply commodity cotton. Counties growing more than 50,000 mu also have fields that are widely scattered. In terms of regional difference, the south has more concentrated cotton fields than the north. In 1973, the 16 major cotton producing counties, each growing over 400,000 mu, are all in the south. Of these, the 8 counties growing over 500,000 mu are concentrated in the two provinces of Jiangsu and Hubei. In Jiangsu province, which grows 7.3 million mu (excluding Xuhuai), 90 percent of the counties grow more than 100,000 mu. In Hubei province, which grows 8.9 million mu, 85 percent of the counties grow more than 100,000 mu. The two provinces together supply an average of 90-100 jin of commodity cotton per mu, the commodity rate reaching 98 percent. In the north, Henan province's 9 million mu are distributed over the province's more than 120 counties. Less than 60 percent of the counties grow more than 100,000 mu. Almost every production brigade, every commune, every county grows cotton. The province's cotton growing population reached 50 million in the last few years, accounting for over 90 percent of its rural population, while its commodity cotton rate was 15 percent less than Jiangsu and Hubei. In Hebei province, which has a total of 8 million mu of cotton, only 50 percent of the counties grow more than 100,000 mu. More than 50 counties had widely dispersed fields, each mu supplying a dozen or so jin of commodity cotton, so that the commodity rate was only 70 percent. Analysis of the 1976 data shows that the per mu yield of cotton was 80 jin in the south and 35 jin in the north, another reflection of the regional difference in distribution. This shows the north has a great deal of potential. To catch up with the south, the north must change its pattern of distribution. In other words, rational improvement of cotton regions in the north will greatly promote China's cotton output.

The government report to the Fifth National People's Congress pointed out: "In accordance with the principle of concentrated cultivation and rational distribution, production bases of such cash crops as cotton, oil and sugar should be established in places with suitable conditions to make them the state's main supply sources of cotton, sugar and edible oil." In keeping with this spirit and from a long-term point of view, we should select places with suitable climate and soil, where grain production and historical conditions are favorable, and establish concentrated cotton fields, implement specialized production, and build up modern bases of commodity cotton with advanced science and technology. Only in this way can we ensure stable and high cotton yield.

Cotton cultivation in China is distributed mainly in the Huang He and Chang Jiang river valleys, especially the middle and lower reaches of the two rivers, where natural conditions are ideal for cotton growing. Large-tract commodity cotton bases can be developed in counties and communes in the Chang Jiang Delta, Jiang Han Plain, Dongting Hu Plain, Boyang Hu Plain, East Henan Plain, North Henan Plain, Southwest Henan Plain, Central-South Hebei Plain, Fen He Valley, Central Shaanxi Plain, and South Xinjiang Island Basin. In addition to consolidating existing concentrated cotton regions, efforts should

be made to further develop suitable areas not yet fully exploited. South Xinjiang, for example, has a dry climate, plentiful sunshine and abundant heat resources. The annual rainfall here is less than 100 mm, sometimes rainless the whole year. Sunshine time registers 3000 hours, with 10°C accumulated temperatures totaling over 4000°C. The Turpan Basin registers 5000°C or over. There are huge tracts of undeveloped land (data provided by relevant authorities shows south Xinjiang has over 100 million mu of undeveloped land) which can be irrigated by melted snow from high mountains. South Xinjiang also has a long history of cotton cultivation. Greater efforts should be made to develop cotton regions here to make them major new bases of high-quality long-staple cotton. Next, there are huge cultivated regions north of Huai He in Jiangsu and Anhui provinces (34 million mu in Anhui province alone), which, being plains situated between Chang Jiang and Huang He, possess cotton-growing advantages of both the north and the south. These regions have greater heat resources than the Huang He cotton regions and suffer less from flood and waterlogging than the Chang Jiang cotton regions. Also, the flat terrain and thick fertile soil are most suited for cotton growing. While new cotton regions have been developed since liberation (the 2.3 million mu in north Anhui account for 8 percent of its cultivated land), there is potential for greater development. As grain production increases steadily, it seems feasible to tap the productivity of land more fully to make the region a new base of commodity cotton.

Some other existing cotton regions do not enjoy suitable conditions. The extra early ripening cotton region in Liaoning province and north Hebei province, for example, have only 140-160 frost-free days, less than 150 days of consecutive 15°C days. Low temperatures in the spring often result in loss of seedlings or late-sprouting seedlings. The high-temperature period is short, with temperatures falling fast in autumn. Low temperatures in the later part of the cotton growing period retards ripening of cotton staples. Overgrowth of post-frost cotton bolls result in low yield and poor quality. The close to 2 million mu of cotton fields in Liaoning province average less than 40 jin per mu. Post-frost bolls account for 30 percent of the output in a normal year. In future, cotton fields in these places should be reduced in area, growing just enough for self provision and not developed as commodity cotton bases. Also, no more cotton should be grown in the hilly regions in the south.

Concentrated Distribution of Cotton Regions Must be Complemented by Correct Handling of Grain-Cotton Relationship

Grain is the guarantee to the specialization of cotton production. It is important to handle the relationship between grain and cotton correctly in the course of appropriately concentrating cotton fields. Grain plays an important part in the overall stability of the country and the speed of socialist construction. Since China has a huge population, and especially since her grain production has not yet achieved a high level, it is important to pay close attention to grain production. Stressing the importance of grain production, however, does not mean we should concentrate on grain only. Comrade Li Zhiannian said at the National Conference on Basic Improvement of Farmland: "On the national level, our principle is: Take grain as the key link, promote

overall development, suit measures to local conditions, achieve appropriate concentration. On the regional level, timber regions should concentrate on forestry, pastoral regions should concentrate on livestock raising, fishing regions should concentrate on fishery, and cash crop regions should concentrate on cash crops." Making grain the key link is advocated for the country as a whole. It does not mean that all counties, communes and production brigades should make grain production the principal occupation regardless of local conditions. Cotton regions should make cotton growing the principal task. Of course cotton regions should also try to improve grain production as much as they can in order to ensure cotton development. Many cotton regions have in fact succeeded in doing so. Except for Tianmen in Hubei province, Cixi in Zhejiang province, Sheyang and Siyang in Jiangsu province, where cotton land predominate so that there is a need to buy grain from other places, most cotton counties are able to provide their own grain. Still, the contradiction between grain and cotton remains a major problem in some cotton regions, making it difficult to appropriately concentrate cotton fields and build up commodity cotton bases. Specifically, some concentrated cotton regions, in particular some important commodity cotton bases, are required to contribute substantially in both grain and cotton. Well-known Qidong county in Jiangsu province, for example, cultivates 580,000 mu of cotton, supplying the state with 700,000 dan each year (over 1 million dan in recent years). It has been self-sufficient in grain since 1960, in addition to selling 20 million jin of grain to the state each year. Still, since 7 or 8 years ago, Qidong county has been spending great efforts to increase grain production through developing paddy rice and intercropping grain and cotton. This has affected the development of cotton land so that cotton yield hovered at the same level for years. A major cotton county like Qidong should develop its specialization fully, i.e., concentrate on growing cotton. The state should stop asking Qidong for commodity grain so that the county can develop further as a cotton base. Also, some traditional cotton regions, where a high proportion of land is given to cotton, are also required to provide their own grain. In Cixi county, Zhejiang province, for example, its 400,000 mu of cotton occupy over 70 percent of its cultivated land. The county topped a per mu yield of 100 jin of cotton way back in 1957 and once achieved an all-time high of 150 jin per mu. Since the 1970s, however, per mu yield plummeted to below 100 jin, hitting as low as 50 jin. The reasons for the drop in yields are many, an important one being the relationship between grain and cotton. In order to achieve self-sufficiency in grain, cotton growing gave way to grain on a fairly wide scale. Expansion of spring grain sowing greatly cut down on green manure for cotton fields. Tight grain supply resulted in low grain ration for cotton growers, which in turn dampened their enthusiasm for cotton cultivation. This traditionally famous cotton county has not been able to regain its high level of cotton production. A historically-evolved, highly-concentrated cotton base like Cixi should make full use of its skilled manpower to specialize in cotton cultivation, bringing local talent into full play. There are high-yield grain regions close to Cixi capable of providing some of the grain it needs, thus ensuring continued development of Cixi's cotton. Again, some newly developed cotton regions are ideally suited for cotton cultivation, but expansion of cotton areas has not led to a reduction in state grain purchase quotas, so that cotton expansion is greatly limited. A case in point is the North-of-Huai He region. Its cotton areas have expanded

in recent years but its state purchase quotas of grain have also increased steadily, so that the region has not been able to bring the scattered cotton fields together and take full advantage of local conditions. In concentrating cotton land in future, regions that have expanded their cotton fields should have their grain purchase quotas reduced. Increased purchase quotas should be borne by grain regions that have cut down on cotton growing. This way each region will concentrate on its strong points to realize rational regional division of labor.

In a word, in the course of building up commodity cotton bases, the national distribution of cotton regions should tend toward concentration, the valley cotton regions will determine their own rational proportion of cotton land. Production brigades, communes and even counties that are commodity cotton bases specializing in cotton cultivation will devote a large proportion of land to cotton. Grain for these bases must be ensured. Of course it will be fine if these bases can provide their own grain. For those unable to do so, arrangements should be made within the county or within the prefecture to ensure rational allocations. Advocating "cotton growers should not eat commodity grain" does not favor the development of commodity cotton bases.

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DISTRIBUTION OF AGRICULTURAL COMMODITY BASES DISCUSSED

Beijing NONGYE BUJU YU QUHUA [AGRICULTURE DISTRIBUTION AND ZONING] in Chinese
Mar 82 pp 180-183

[Article by Chen Jun [7115 7486] and Cai Renqun [5591 0086 5028] of the Chinese Academy of Sciences, Geography Institute, Guangzhou, "A Probe (Abstract) Into the Question of An Equitable Distribution of Agriculture Commodity Bases"]

[Text:] I. The Significance of Researching the Equitable Distribution of Agricultural Commodity Bases

The establishment of agricultural commodity bases is one form of agricultural production specialization realized in our country. Under the national consolidation plan, those areas which are appropriately centralized in line with local conditions, and with a core of leading sectors have a fairly high rate of specialization which can provide the country with staples of farm produce, may be called agricultural commodity bases. These types of bases are engaged in a style of enterprise where one crop is king, with a diversified economy that is unlike a single-product economy of a one-sided specialization and which is also different from the "small but complete" enterprises where the main production is of a self-sufficient nature. Commodity bases may have different dimensions; however, our major point of research concerns the large scale agricultural commodity bases which have significance for the country as a whole or those significant to a province per se.

II. The Selection Principles for Agricultural Commodity Bases and Estimates On the Scope of Development

A. The Selection Principles for Agricultural Commodity Bases

(1) Where a specialization production foundation is fairly good, the commodity rate of farm produce is fairly high. Those areas originally with fairly good specialization foundations, all have naturally suited conditions for development; they have a long-standing history of development; the masses have accumulated a fairly abundant amount of managerial experience in production techniques; and some still cultivate improved varieties of commodities. Thus, the specialized sector has already begun to take shape;

and the commodity rate of farm produce is fairly high and can provide a fairly large amount of staples. Quite obviously, establishing commodity bases in these kinds of areas will reap great benefits with minimum investment.

(2) There is great potential for expanding specialized production. Although some areas at present are somewhat lacking in foundations for specialization and have a fairly low level of production, they nevertheless have favorable conditions for developing certain types of specialization sectors. If barren land can be brought under cultivation, and the seacoasts rich in natural resources can be tapped, the acreage for planting can be expanded on a large scale. Or those areas which although at present, having low yields per unit area, by undergoing improved production conditions, and with improved techniques, might possibly raise the amount of commodities to a great extent for the area, could also be considered as candidates for a commodity base.

(3) Convenient internal and external communications and transportation. This is a prerequisite condition for setting up a base. Since most of the produce from the bases needs to be processed and shipped out to markets, and, simultaneously, large batches of production materials such as fertilizer and farm machinery and tools, and such means of subsistence as foodstuffs have to be shipped in, there is a necessity for frequent contact in and out of an area. Thus, it is necessary to form a fairly complete transport system within the base. To establish agricultural commodity bases along railway lines or riversides and coast lines where transport conditions are good would frequently bring obvious economic benefits. Certainly, communications and transportation conditions can be improved; however, none of those areas which because their geographic positions are remote, and transportation and communication is exceedingly inconvenient, would be suitable to select for bases in the near future.

(4) We must centralize and connect tracts as much as possible. In order to make it convenient to strengthen the leadership of the commodity bases and to make it favorable for unified plans within the bases for such capital construction as establishing transport lines, radio nets, and large-scaled irrigation works, the large agriculture commodity bases should be centralized and connected as much as possible. Moreover, some areas, due to various historical reasons, have formed fairly flourishing produce processing industries; the establishment of nearby bases for raw materials can be considered, making them suited to the present processing industry. In those areas with a backward economy and in the areas where minorities live, although sometimes they do not have complete conditions for establishing agricultural commodity bases, full attention must be given to them when changing the zoning for agricultural production and choosing bases, in order to promote the economic development of these areas.

B. Estimates on the Scope of Development for Agricultural Commodity Bases
Determination for the scope of development for agricultural commodity bases is a working category of the national planning branches. However, we can start from the angle of equitable distribution of production, and from full

utilization of favorable natural and economic conditions, and through analysis of production conditions and production potential, make basic estimates for the scope of development for the leading sector of the bases, and provide the scientific data and basis for planning the development of the commodity bases.

The most important estimates for the scope of development are the planting area, the amount of yield, and the amount of commodities which the specialized sector is capable of attaining. The produce yield is determined by the size of the planting area and the level of yield per unit area. The ways to enlarge the size of the planting area are: one, to adjust the planting proportions of current produce, reduce the non-specialized sectors in order to enlarge the specialized sectors; two, open up wasteland to expand planting; three, raise the multiple crop index. Equitable arrangements for use of land must be done by unified planning with due consideration for all concerned in accordance with national needs, an equitable structure of agricultural sectors and a system of crop rotations, etc. When estimating the per unit area yield, thorough analysis must be carried out for such factors as favorable and unfavorable natural conditions of the bases, the frequency of occurrence for natural disasters and the extent of crop failures, the probability of change to unfavorable conditions, the anticipated headway for the Four Modernizations of agriculture; and a rough estimate made of the possible amount of yield which can be reached during a bumper harvest year and an average yield year. At present, all the various representative high-yield crops, which are the future objectives to fight for in raising the per unit area yield over a large area, by making comparisons of conditions, can be used as the major reference for estimating the per unit area yield. When estimating the amount of commodities produced, consideration must also be given to whether the rate of consumption will increase due to an increase in population.

When estimating the scope of development for the amount of commodities produced, a many-faceted comparison of programs should be adopted. And definitive comparisons demonstrating proofs against the good and bad points of every single program should be carried out to provide options for the production leadership sector when they decide on their plans.

III. A Few Relationships Which Must Be Correctly Handled In Establishing Agricultural Commodity Bases

A. The Relationship Between Specialization and A Diversified Economy

The extent of specialization for all of our present commodity bases is fairly low. In the leading sectors, no matter at what proportion the whole farming enterprise at the bases is composed of arable land, employment of labor, and output value of the farm produce, none is sufficiently high. The amount of commodities provided is minimal; and the superiority of specialized production has still not been fully reflected. Therefore, from now on each base must first establish leading sectors of specialization, favorable to raising the degree of specialization. This would enable crop planting to

be centralized as far as possible, and would allow an even more equitable division of labor among the labor regions. Looking at the practises at the present commodity bases, there are many good points in doing this; it is beneficial to broadening agricultural mechanization and raising the rate of use of farm machinery; it is beneficial to building plants in local areas for processing the produce, saving on transportation expenses, decreasing consumption, and lowering cost; it is beneficial to promoting industrial development of the commune units, changing their economic structure, strengthening their economic power, and increasing the income of the commune members; it is beneficial to expanding agricultural scientific research, and raising the level of scientific farming; it is beneficial to familiarizing the leadership at all levels with production and enhancing their abilities for management and administration. These benefits will create favorable conditions for raising the quality and yield of the produce and will raise the production rate of labor.

The sugarcane base at Sanjiaozhou in Juzhiang is a perfect example. Because full use was made of superior natural conditions suitable to growing sugarcane, and by centralizing the sugarcane fields with connecting tracts of land, each mu produced about 10,000 jin, almost double the average per mu yield for the entire province. The centralized sugarcane fields, a large quantity of raw materials, and conditions where water transport is convenient and cheap, made it suitable for constructing a large sugar refinery. The technology and equipment of the large sugar refinery is advanced, the labor production rate is much higher than that of middle and small-scaled sugar refineries; and furthermore, it is adaptable to multipurpose uses. Thus, the cost of each ton of sugar is only about half that of the middle and small scale refineries in the other areas of the province. Add on the by-products from the multipurpose uses of the refinery, and the value created by each ton of sugarcane is several times higher than that of the sugar refineries for sugarcane fields in decentralized areas.

Although such obvious economic benefits accrue from specialization at the bases, nevertheless, different agricultural sectors, and different varieties of crops have their own different levels of centralization. This must be determined through a concrete analysis of the special characteristics for each variety of crop. Where there is a strict requirement for natural conditions, such as with rubber and other tropical crops, and there is not much space in the country to accommodate planting, suitable land should be selected where planting can be centralized. Crops like sugarcane with enormous bulk (high yield per mu of sugarcane field above 10,000 jin), with a low production conversion rate (each 100 jin of sugarcane producing 12+ jin of sugar), with marked economic benefits derived from centralized planning, and those crops like fruits and vegetables which ripen fast, are not conducive to storage, are inconvenient to transport, and need timely processing or which are supplied to markets on the spot, should be centrally planted as much as possible. But for those crops which are suited to fairly broad natural environments, and for which transport is relatively easy, and which are fairly conducive to storage, do not need to be centralized.

However, at the same time the agricultural commodity bases are developed for specialized production, attention must be given to developing a diversified economy, and avoiding a tendency toward unilateral specialization, thereby making the base economic structure even more equitable. Since water and soil conditions are likely to differ within an area, the planting of different crops will reap the most benefits from the land. In order to have an equitable rotation of crops, and avoid depletion of soil fertility from long periods of continuous cropping, there must be a suitable proportion of crop planting. At the same time, in order to satisfy as much as possible the needs of a self-supporting nature within the bases proper and to make it easy for readjusting the labor force, developing a diversified economy is also necessary. But, this kind of diversified economy must be beneficial to promoting the development of leading sectors with specialized crops, and cannot hamper that development. From the standpoint of arranging for the utilization of land, labor, capital, and farm tools and machinery, priority must be given to assuring the needs of the leading sectors are met first.

B. The Relationship Between Food Production and Specialized Sectors

In the long view, the trend in development of agricultural commodity bases should gradually reduce production of a self-supporting nature and increase production of commodities; only in this way can the advantages of specialization be realized. However, because our present grain production has yet to be solved, the country cannot yet provide enough marketable grain to each agricultural commodity base. Thus, how to handle the relationship between grain production and the specialization sectors of the bases has become a protruding contradiction facing us in the construction of the agricultural commodity bases.

We believe that the development of agricultural commodity bases must proceed from the actual situation in our country; and before there are ample conditions where the country can supply enough marketable grains, transport facilities, processing, farm machinery, water conservancy, electric power, etc., the specialization sectors of the bases can only be developed gradually, solidly improved, and cannot be sought with undue haste. This is especially true for the expansion of the scope of the commodity bases where it definitely must be suited to the level of food production for the country as a whole. Within a fairly long span of time, the grains produced from the greater part of the agricultural commodity bases must be self-sufficient in part or for the most part. Thus, speaking from the standpoint of the country as a whole, in building agricultural commodity bases, the foremost emphasis should be on bases for marketable grains. Without these bases for marketable grains to supply large volumes of grains to other agricultural commodity bases, it will be difficult to develop the other bases. The other agricultural commodity bases must also pay attention to the development of grain production, and raise the level of per unit area yield, so that the land area for grains is reduced in the future and the creative conditions for specialization sectors is expanded. Otherwise, it will bring a lot of difficulties to base construction.

At the same time, it should also be pointed out that the problems associated with the self-sufficiency of grains for the agricultural commodity bases must be dealt with in different ways based on the different circumstances involved. None of the bases such as the agricultural bases in the suburbs of large and medium-sized cities, large-scaled bases for foreign exports, bases for tropical crops which produce the special goods and materials needed by the country, and those bases for cash crops which occupy a major position in the country as a whole, the forestry bases, the fisheries, and the bases for animal husbandry should require self-sufficiency in grains. Practical experience has proved that if it is required for all bases to definitely have self-sufficiency in grains before the bases can develop specialized production, this inevitably will impede the development of the commodity bases, and will be disadvantageous to the national socialist construction.

C. The Relationship Between the Industrial and Agricultural Disposition Of the Agricultural Commodity Bases

The majority of the large volumes of agricultural raw materials produced by the agricultural commodity bases is not suitable for transporting over long distances, and must be processed on site. Building processing plants at the areas producing the raw materials not only guarantees the quality and amount of the raw materials, but also saves a large amount of the shipping expenses. This in turn provides advantageous conditions for lowering the costs of the product, and enhancing the quality of the product. Some produce, with an especially fast ripening nature, will spoil if not timely processed, and will go bad and lose its use value. All of the agricultural raw materials which have undergone processing or initial processing are reduced in bulk and weight, are easy to ship elsewhere, and increase markedly in value. Therefore, the bases must build up suitable processing industries for the farm produce. At the same time, because the farming industry of the bases is one of large modernized production, and the level of mechanization is high, it is necessary to develop farm machinery repair and manufacture and other aid-agriculture industries.

From this it can be seen that, a modernized agricultural commodity base is a consolidated organism with agriculture as its foundation, with industry and agriculture closely linked in mutual cooperation. Therefore, when researching the distribution of agricultural commodity bases, not only must research be conducted on the distribution of the base's agriculture, but the industrial distribution must be researched as well. For instance, in researching the distribution of a sugarcane base, not only must research be conducted on such things as the scope of development of the sugarcane, the planting ration, the variety pairings, the crop rotation system, the relationship with other crops, and the distribution of the sugarcane fields, but also suitable research must be conducted on such things as the scope of the sugar refinery, the selection of the site for building a refinery, the dividing up of the sugarcane district, the type of transport, and the economic benefits of the consolidated uses of the produce. In addition, there must be a probe into the influence of the agricultural commodity base on the direction the development of the link between agriculture and industry has on the production distribution.

MATHEMATICAL MODEL FOR RICE EVAPOTRANSPIRATION EXPLAINED

Beijing SHUILI XUEBAO [JOURNAL OF HYDRAULIC ENGINEERING] in Chinese No 5, May 82 pp 1-10

[Article by Xu Zhifang [6079 1807 2455], Mao Zhi [5374 2535] and Zhao Lingshuang [6392 3781 3642],** Wuhan Institute of Water Conservancy and Electric Power: "Study of Mathematical Model for Calculating Amount of Paddy Field Evapotranspiration"*]

[Text] Synopsis

This article has as its point of departure the "soil-crop-atmosphere" continuum of the field environment, with stress on analysis of the influence of meteorological factors on the amount of paddy field evapotranspiration. For this purpose, a mathematical model for calculating the amount of paddy field evapotranspiration was set up that took into account meteorological factors (temperature, hours of sunshine daily, wind velocity, and air saturation deficits) as indicators. Testing and verification was done using experimental data from five irrigation areas in Hubei Province and from Chu County in Anhui Province for very good results.

Paddy field water consumption includes both the amount of evaporatranspiration (the combination of the quantity of paddy rice transpiration and the amount of water evaporation among plants), and the amount leaked away. This is basic data in determining the paddy irrigation system. In the planning and design of paddy rice irrigation areas and in the task of managing use of water, frequently a method of analysis and calculation is needed to determine the irrigation system. Consequently, study of mathematical models and calculation methods for the amount of evapotranspiration is not only of theoretical significance, but is currently of definite value in actual use.

*Help was received from and data provided by five experimental stations in the Zhang He Irrigation Area of Hubei Province and the Chu County Hydrology Experimental Center in Anhui on this research work.

**This article was prepared with the guidance of Professors Xu Zhifang and Mao Zhi, written by research student Zhao Lingshuang, and revised and completed by Professors Xu and Mao.

By way of exploring a mathematical model for amount of paddy rice evapotranspiration, in 1980 the authors conducted experiments at the Zhang He Irrigation Area Experimental Station in Hubei Province on the quantity of paddy rice evapotranspiration, and they collated both data on the amount of evapotranspiration over the years at the station, and meteorological data for the same period. The Zhang He Irrigation Area Experimental Station is located in a hilly region of Jingmen County in Hubei Province. The station's experimental plots for quantity of paddy rice consumption of water are located on terraced fields at various levels. Each plot covers an area of 124 square meters, and the method of irrigation used produces an output of 800 to 1,200 jin per mu (of double cropped rice). Within the station is a 25 x 25 meter square meteorological area where all sorts of conventional meteorological measurements are made. From 1974 up to the present time, this station has used a stop ended measuring pit [2589 1646 3261 0977] to measure the quantity of paddy rice evapotranspiration, the principal measuring pit having an area of 1.67 square meters (in which 100 clumps of paddy rice were planted). A secondary test pit used as a control has an area of 4 square meters. For both the main and the secondary test pit, two repeats are set up, and the test pits are located in the area for testing quantity of water consumed. Both the test pits and the plots use marking pins to monitor water levels, making observations daily at 8:00 a.m. On the basis of the water level monitoring data, they use the water volume equilibrium method to calculate the day by day quantity of evapotranspiration. The data and monitoring methods used in this article to set up empirical formulas of a regional nature are similar to those used at the Zhang He Irrigation Area Experimental Station.

1. Relationship Between Quantity of Paddy Rice Evapotranspiration and Meteorological Factors

Quantity of evapotranspiration of paddy rice is affected by all sorts of factors in the overall "soil—crop—atmospheric" system. These factors may be categorized as non-meteorological factors and meteorological factors. By non-meteorological factors is meant kinds of paddy rice (early, intermediate, or late paddy rice), growth stages, soil conditions in paddy fields and agricultural measures. By meteorological factors is meant solar radiation, air temperature, hours of sunshine, air humidity, and wind velocity. Non-meteorological factors have a definite effect on the quantity of evapotranspiration of rice; however, in special areas under special circumstances (where rice is of certain kinds and irrigation methods and agricultural methods are of certain kinds), their effect is not predominant. Practice has demonstrated that meteorological factors are the predominant factors affecting quantity of evapotranspiration of paddy rice, so this article emphasizes analysis of the relationship between meteorological factors and the quantity of evapotranspiration of paddy rice, and sets up a mathematical model for calculating quantity of paddy rice evapotranspiration on the basis of meteorological factors.

(1) Relationship Between Air Temperature and Quantity of Paddy Rice Evapotranspiration

Solar radiation energy is the sole energy source causing evapotranspiration of crops, thus it places a controlling role in quantity of water needed. The soil surface continuously stores up heat energy from the absorption of solar radiation (short wave radiation), and gradually increases in temperature. At the same time, it radiates heat energy into the atmosphere in the form of radiation (long wave radiation). On the basis of radiation laws the intensity of radiation of an object is in biquadratic direct ratio to its temperature, so the greater the intensity of solar radiation, the greater the amount of heat energy absorbed and stored by the ground surface, the higher the temperature of the ground surface, and the greater the intensity of long wave radiation by the ground into the atmosphere. Though the atmosphere absorbs virtually none of the sun's short wave radiation, it is able to absorb intensely the long wave radiation of the ground surface. An analysis of the foregoing means that the greater the intensity of solar radiation, the greater will be the concomitant indirect intensity of the long wave radiation from the ground, and the greater will be the atmosphere's absorption of heat energy, i.e. the higher the air temperature. Thus, air temperature and solar energy are closely related, and thus air temperature and quantity of evapotranspiration are closely related.

Actual measurement data from five irrigation experimental stations in Hubei Province at the Zhang He, Sandao He, the mouth of the Feng Jiang, Bailian He, and Mei Chuan were used to analyze the relationship between air temperature and quantity of paddy rice evapotranspiration. The mathematical formula for the relationship between the quantity of daily evapotranspiration of rice and the exponential function of the average daily air temperature is

$$E'_{\text{days}} = ae^{bT} + c. \quad (1)$$

In the formula E'_{days} is the daily quantity of evapotranspiration of paddy rice (in millimeters); T is average air temperature ($^{\circ}\text{C}$) on any given day; a , b and c are empirical constants.

By using a TQ 16 electronic computer, the day by day quantity of evapotranspiration, E'_{days} , and the same day average air temperature fitted curve formulas shown in Table 1 were obtained for the five irrigation areas in Hubei Province, and for Chu County in Anhui. The fitted curve for some of the formulas in Table 1 are shown in plates 1-4.

Table 1. Relationship Between Quantity of Evapotranspiration and Air Temperatures at Each Station

(1) 灌溉试验站	(2) 稻 种	(3) 计 算 式	(4) 相关系数	(5) 相关系数 临界值	(6) 观测测点数	(7) 插秧时间	(8) 置信度
(9) 张河站	(10) 早 稻	$E'_{10} = 0.094t^{0.1487} + 1.188$	0.84	0.17	223	(17) 5月1日左右	0.01
	(11) 中 稻	(13) $E'_{11} = 0.165t^{0.1347} - 0.5$	0.79	0.15	299	(18) 5月30日左右	0.01
	(12) 晚 稻	$E'_{12} = 7.0t^{0.0347} - 10.3$	0.80	0.23	123	(19) 8月1日左右	0.01
(14) 封江站	(10) 早 稻	$E'_{14} = 0.1547t^{0.1333} + 1.1343$	0.80	0.18	210	(20) 4月尾	0.01
(11) 白土岗站	(10) 早 稻	$E'_{11} = 0.238t^{0.127}$	0.81	0.20	162	(21) 4月下旬	0.01
(12) 夹江站	(10) 早 稻	$E'_{12} = 0.33t^{0.117}$	0.78	0.22	128	(22) 5月上旬	0.01
(15) 长 安 站	(10) 早 稻	$E'_{10} = 0.14t^{0.1267} + 1.1$	0.80	0.17	229	(23) 4月中旬、下旬	0.01
	(10) 早 稻	$E'_{10} = 0.54t^{0.0917} - 0.35$	0.80	0.24	118	(24) 4月中旬	0.01
	(10) 早 稻	$E'_{10} = 0.038t^{0.1757} + 1.811$	0.81	0.24	111	(24) 4月下旬	0.01
	(11) 中 稻	$E'_{11} = 0.1t^{0.1477} + 0.9$	0.79	0.16	284	(25) 5月下旬	0.01
	(11) 中 稻	$E'_{11} = 0.23t^{0.127} + 0.5$	0.79	0.20	160	(26) 5月30日左右	0.01
	(11) 中 稻	$E'_{11} = 0.034t^{0.1757} + 2.1$	0.78	0.25	104	(18) 5月30日左右	0.01
(16) 滁县中心	(11) 中 稻	$E'_{11} = 0.077t^{0.1177}$	0.81	0.25	112		0.01

注: 各计算式均适用于气温在12~33°C的范围内。(27)

Key:

1. Irrigation Area Experimental Station
2. Kind of rice
3. Computation formula
4. Relative coefficient
5. Relative coefficient critical value
6. Number of sites at which observations made
7. Time of transplanting
8. Confidence
9. Zhang He Station
10. Early rice
11. Intermediate rice
12. Late rice
13. Day
14. Mouth of Feng Jiang station
15. Changqu station
16. Chu County Experimental Center
17. Around 1 May
18. Around 30 May
19. Around 1 August
20. End of April
21. Last 10 days of April
22. Last 10 days of May
23. Mid-April and last 10 days of April
24. Mid-April
25. Last 10 days of May
26. Around 20 May
27. Note: In all calculations, an air temperature of 12~33°C was used.

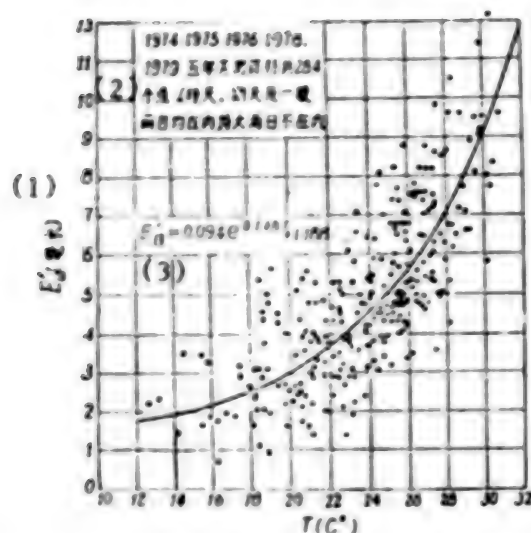


Figure 1. Fitted curve showing relationship between quantity of early rice evapotranspiration and average air temperature on the same day at the Zhang He Station.

Key:

1. E'_{day} (millimeters)
2. Measurement data from 284 sites for the 5 years of 1974, 1975, 1976, 1978, and 1979. (Clear days, cloudy days, and ordinary rainy days included, but days of exceptionally heavy rain not included)
3. $E'_{\text{day}} = 0.094e^{0.148T - 1.188}$

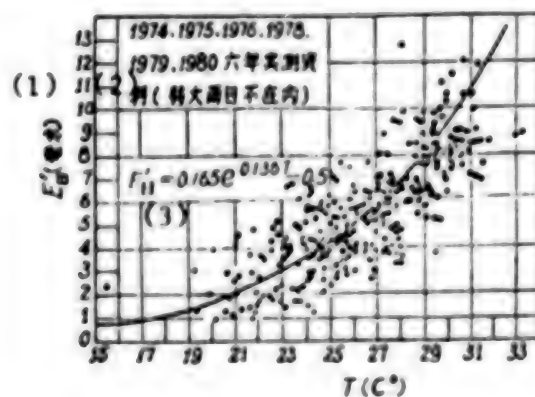


Figure 2. Fitted curve showing relationship between quantity of early rice evapotranspiration and average air temperature on the same day at the Zhang He Station.

Key:

1. E'_{day} (millimeters)
2. Measurement data for the 6 years of 1974, 1975, 1976, 1978, 1979, and 1980 (days of exceptionally heavy rainfall not included)
3. $E'_{\text{day}} = 0.165e^{0.136T - 0.5}$

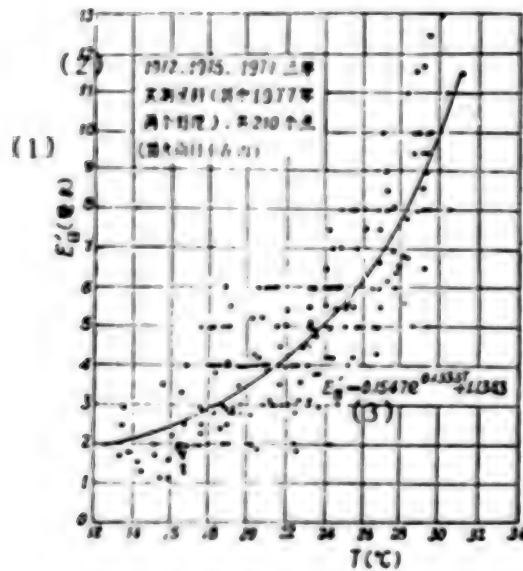


Figure 3. Fitted curve showing relationship between quantity of early rice evapotranspiration and average air temperature on the same day at the mouth of the Feng Jiang station.

Key:

1. E'_{day} (millimeters)
2. Measurement data for the 3 years of 1972, 1975, and 1977 (two processings of 1977) at 210 sites (days of exceptionally heavy rainfall not included)
3. $E'_{\text{day}} = 0.1547T + 1.1343$

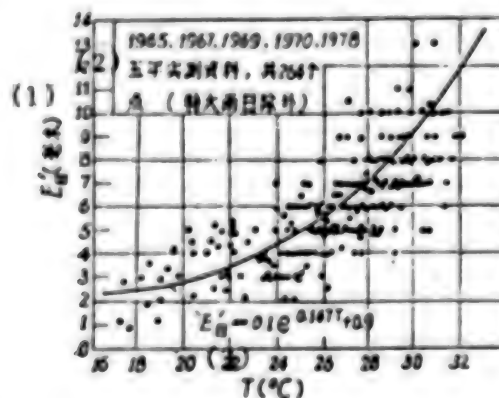


Figure 4. Fitted curve showing relationship between quantity of early rice evapotranspiration and average air temperature on the same day at the Changpu Station.

Key:

1. E'_{day} (millimeters)
2. Measurement data taken at 264 sites for the 5 years 1965, 1967, 1969, 1970, and 1978.
3. $E'_{\text{day}} = 0.1e 0.147T + 0.9$

(2) Relationship Between Air Saturation Deficit and Quantity of Evapotranspiration for Paddy Rice

Evapotranspiration of water from rice plants and dispersal from free water surfaces are affected by the gradients of water vapor pressure and air water vapor pressure of the evaporating surfaces (leaves and water surface between plants), and the water moisture pressure at the evaporating surface is near saturation; thus the quantity of evapotranspiration is affected by the air saturation deficit. From water moisture dispersion theory it is possible to construct the relationship between the two. Under conditions of no wind, as a result of the water moisture flux (quantity of evapotranspiration) caused by molecular dispersion, a proportion is formed with the perpendicular gradient of the specific humidity. Thus:

$$E_d = D_0 dq/dZ. \quad (2)$$

In the formula: D_0 is the static wind dispersal coefficient. After separating the variables in formula (2), the integral from

$$\text{yields } E_d = \frac{D_0}{Z} (q_3 - q). \quad (3)$$

In this formula q_3 is the specific humidity of the saturation surface; q is the actual specific humidity of the air; Z is integral height, $Z = Z_2 - Z_1$. (4)

Substitution of the humidity formula $q = 0.622e/P_1$ in the above formula yields

$$E_d = a (e_3 - e). \quad (5)$$

In the above two formulas e is the actual water moisture pressure of the air; e_3 is the saturated water moisture pressure; P_1 is atmospheric pressure; and a is a constant.

Formula (4) is an equation for water moisture molecule dispersion under wind-free conditions. Because of the air saturation deficit $d = e_3 - e$, the direct ratio relationship formula for amount of evapotranspiration E_d and air saturation deficit is $E_d = ad$.

We used measurement data from the Zhang He Irrigation Area in Hubei Province to prove out formula (5). For results see Table 2.

Table 2. Relative Coefficients for Daily Quantity of Evapotranspiration of Paddy Rice and Same Day Saturation Deficity at Zhang He Irrigation Area

Kind of rice	Number of measuring sites	Relative coefficient calculation value	Relative coefficient critical value	Confidence
Early rice	223	0.541	0.180	0.01
Intermediate rice	299	0.703	0.148	0.01
Late rice from greening up until end of tillering	106	0.675	0.254	0.01
Late rice from end of tillering to yellow ripe stage	123	0.749	0.228	0.01

(3) Relationship Between Sunshine and Quantity of Evapotranspiration

Clouds play the greatest role in reflecting solar radiation (the cloud reflecting rate being greater than 50 percent), but the longer the hours of sunshine, and the more the solar radiation heat that reaches the surface of the ground, the greater the amount of evapotranspiration. Secondly, light affects the opening and closing of stoma. Under ordinary circumstances, stoma open in the presence of light and close when it is dark. Since stoma are the ports through which the water of transpiration escapes, when the hours of sunlight are long, the amount of evapotranspiration is increased. Furthermore, light is a necessary condition for photosynthesis and, within certain limits, as sunlight increases, photosynthesis intensifies and is accompanied by increased plant root system absorption of water, transportation of water within plants, and plant metabolic processes, thereby increasing the evapotranspiration. Thus, each of the foregoing points shows that the quantity of evapotranspiration increases as the hours of sunlight increase. Analysis of data for a period of more than 200 days at five experimental stations in Hubei Province shows a linear relationship between the number of hours of sunshine and the day by day quantity of evapotranspiration, the form of which is $E_{\text{day}}^* = aQ + b$ with E_{day}^* being the daily amount of evapotranspiration, Q being the number of hours of sunshine for the same day, and a and b being empirical constants. The relative coefficient of the two is greater than 60 percent.

(4) Relationship Between Wind Velocity and Amount of Evapotranspiration

Wind can dispel moisture from the surface of plants, thereby increasing the humidity gradient of the crops and the water surface and at the same time increasing the difference in temperature between paddy rice leaves and the air, thereby increasing the amount of evapotranspiration. Looked at either in terms of theoretical analysis or observation data, the effect of wind velocity on paddy rice quantity of evapotranspiration cannot be ignored. The Dalton formula long ago described the effect of wind velocity on evaporation or transpiration, and subsequently there have been quite a few schools that have generated empirically related formulations, which

demonstrate that evaporation or transpiration form a direct ratio with the function of wind velocity $f(u) = a + bu$, with u being wind velocity, and a and b being empirical constants.

2. Mathematical Model for Quantity of Evapotranspiration of Paddy Rice and Regional Empirical Formulas

Quite a few methods for calculating amount of evapotranspiration by crops have been proposed both inside China and abroad, and there are many empirical and semi-empirical calculation methods. Semi-empirical methods of calculation based on the principle of amount of heat balance possess a certain theoretical validity and their precision in application is also high, but they require expensive radiation instruments and numerous observations, as well as comparatively numerous calculations. They remain little used in China today. Given China's specific circumstances today, most of the methods used to calculate quantity of evapotranspiration of paddy rice are single element methods in which factors considered are not complete, which impairs the accuracy of calculations. Some of the multi-element empirical methods of calculation used in foreign countries are limited by geographical and meteorological conditions and cannot be borrowed for use in China. In view of the foregoing situation, below is provided a mathematical model as well as some regional empirical formulas that use many common meteorological factors to calculate the amount of evapotranspiration of paddy rice.

(1) Mathematical Model for Calculating Amount of Evapotranspiration of Paddy Rice

Through analysis of the factors that affect quantity of evapotranspiration of paddy rice, one can realize the effects of numerous factors on quantity of evapotranspiration and that these factors themselves mutually affect each other. While maintaining objectivity and reflecting actual circumstances to the maximum extent possible, proper simplification has been done, and account taken of specific circumstances pertaining to existing data to characterize air temperature of solar radiation energy and sunshine as the major criteria. In addition, consideration has been given to wind velocity and air humidity as they affect the amount of evapotranspiration, multiple regression analysis being applied and electronic computers used to make calculations to derive a mathematical model for calculating the quantity of evapotranspiration of paddy rice as follows:

$$E_{\text{day}} = a_0 + a_1 e^{bT} + a_2 Q + a_3 u + a_4 d \quad (6)$$

$$E_{\text{day}} = a_0' + a_1 T + a_2 Q + a_3 u + a_4 d \quad (7)$$

In the formula E_{day} is the quantity of daily evapotranspiration of paddy rice (in millimeters); T is the average daily air temperature for the same day ($^{\circ}\text{C}$); Q is the amount of sunshine (hours) for the same day; u is the average wind velocity (meters per second) 2 meters above the surface of the ground; and d is the air saturation deficit for the same day (millibars).

In the formula, other symbols are regional empirical constants as determined from quantity of evapotranspiration measurement data and meteorological data.

Formula (6) was used between the time of transplantation and the booting stage of early and intermediate rice, and between the end of tillering and harvesting of late rice. Formula (7) was used between the milk ripe stage and harvesting of early and intermediate rice, and between the period of transplantation and full tillering in late rice.

(2) Method of Determining the Formula for Calculating Quantity of Evapotranspiration of Paddy Rice and Electronic Computer Calculation Flow Diagrams

1. Steps in determining formula for calculations

(1) Substitute in formula (1) the measured amount of daily evapotranspiration between transplanting and the booting stage and average air temperature data for the same days to figure the three constants a , b , and c , as the E_{day}' values.

(2) Substitute the E_{day}' values in formula (6), thus:

$$E_{day}' = a_0 + a_1' (ae^{bT} + c) + a_2Q + a_3u_2 + a_4d \quad (8)$$

The equation for regression of multiple non-linearity into multiple linearity to solve the problem may be the standard form for writing a multiple linear mathematical model:

$$E_{day} = a_0'' + a_1'E_{day}' + a_2Q + a_3u_2 + a_4d. \quad (9)$$

(3) The electronic computer is used to figure a_1' and a_0'' , and $a_1 = a_1' \cdot a$, $a_0' = a_1' \cdot c$, $a_0 = a_0'' + a_0'$ are substituted in formula (6). In formula (9), other constants are directly outputted by the computer, i.e. the various homologous constants in formula (6).

(4) Formula (7) is used for inputting of measurement data including air temperature T , hours of daily sunshine Q , wind velocity u_2 and air saturation deficit d to determine individual coefficients a_0' , a_1' , a_2' and a_4' in the formula.

2. Electronic computer calculation program flow diagrams

(1) For flow diagram for calculating mathematical model formula (1), please see Figure 5.

(2) For flow diagram for multiple linear full regression formula (7), please see Figure 6.

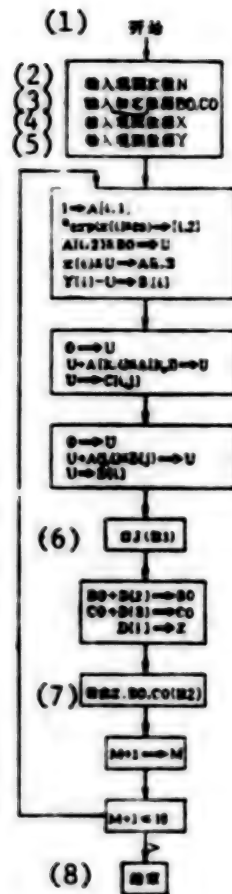
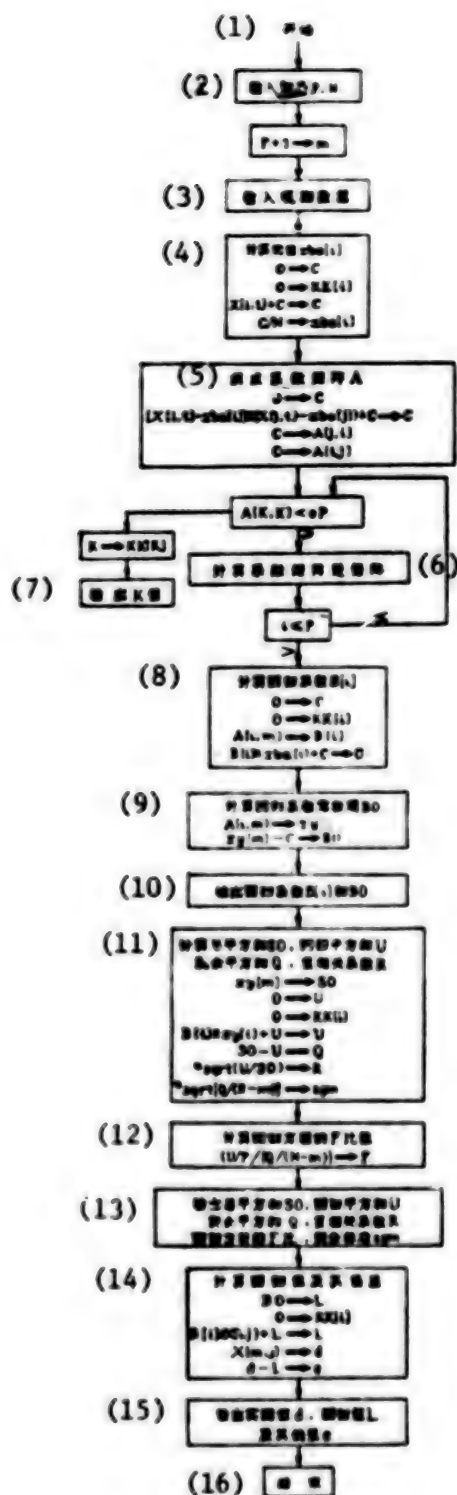


Figure 5

(Note: 1) The standard "library" process must be strictly used whereby a set of n simultaneous equations is solved by the "master" method of elimination of large batches [of unknowns]; 2) the outputed Z value is the C value of formula (1), BO is the a value and CO is the b value.)

Key:

1. Begin
2. Input measurement frequency N
3. Input chuta1 [0443 1966] data BO, CO
4. Input measurement data X
5. Input measurement data Y
6. GJ (Note 1)
7. Output Z, BO, CO (Note 2)
8. End



Key:

1. Begin
2. Input chutai [0443 1966] P,N
3. Input measurement data
4. Calculated average value
5. Composition coefficient [4809 2052 0190 2422] matrix A
6. Calculation coefficient matrix and inverse matrix
7. Output K value
8. Calculation retrogression coefficient
9. Calculation retrogression coefficient constant B0
10. Output regression coefficient B (i) and B0
11. Calculation overall sum of square and SO, regression sum of square and U, residual sum of square and Q, compound relative coefficient R
12. F ratio of calculation regression equation
13. Output overall sum of square and SO, regression sum of square and U, residual sum of square and Q, F ratio of compound relative coefficient R regression equation, and residual standard sgm
14. Calculation regression value and its deviation
15. Output measurement value d, regression value L, and its deviation e
16. End

Figure 6

(Note: In the flow diagram P is the individual number of factors; N is the number of times measurements were taken, and eP is a very small number, which derives 10^{-5} - 10^{-10} .)

(3) Methods of Calculating Quantity of Evapotranspiration of Paddy Rice at Five Irrigation Areas in Hubei Province and at Chu County in Anhui Province

ALGOL-TQ 16 computer language was used to input measure day by day quantity of evapotranspiration and corresponding meteorological data to figure the regional constants in formula (6) and formula (7) shown in Table 3.

Analysis of variance and relative coefficient testing was done of all the regional formulas formed of coefficients in Table 3, analytical results of which may be found in Table 4.

Table 3. Regional Constants for Five Irrigation Areas in Hubei Province and for Chu County in Anhui Province

(1) 区	(2) 期	(3) 等 分 段	a_0	a_1	a_2	a_3	a_4	b
(4) 张 河 灌 区	早(5) 期	1~9	-0.035	0.045	0.144	0.366	0.388	0.148
	早(5) 期	10	0.311	0.080	0.168	0.438	0.441	
	中(6) 期	1~4	-0.050	0.040	0.160	0.280	0.380	0.136
	中(6) 期	5	0.102	0.063	0.093	0.000	0.500	
	晚(7) 期	2~5	-1.004	0.741	0.123	0.382	0.416	0.034
	晚(7) 期	1	1.250	0.036	0.051	0.054	0.310	
(8) 长 家 灌 区	早(5) 期	1~9	-0.870	0.047	0.072	0.308	0.540	0.136
	早(5) 期	10	-2.313	0.122	0.074	0.177	0.700	
	中(6) 期	1~4	0.000	0.045	0.080	0.270	0.310	0.147
	中(6) 期	5	无资料					
(9) 荆 江 口 灌 区	早(5) 期	1~9	-0.700	0.060	0.030	0.600	0.540	0.136
	早(5) 期	10	无资料					
(10) 白 石 河 灌 区	早(5) 期	1~9	-0.830	0.065	0.110	0.220	0.450	0.120
	早(5) 期	10	-1.000	0.074	0.100	1.000	0.330	
(11) 梅 川 灌 区	早(5) 期	1~9	-1.000	0.165	0.040	0.300	0.460	0.110
(12) 滁 县	中(6) 期	1~4	-2.006	0.013	0.204	1.033	0.443	0.157
	中(6) 期	5	-2.844	0.106	0.340	1.452	0.185	

Key:

1. Region
2. Kind of rice
3. Section
4. Zhang He Irrigation Area
5. Early
6. Intermediate
7. Late
8. Changqu Irrigation Area
9. Mouth of Feng Jiang Irrigation Area
10. Baolian He Irrigation Area
11. Meichuan Irrigation Area
12. Chu County

(1) 地区	(2) 期别	(3) 等分數	(4) 調整系數	(5) 平方和	(6) 自由度	(7) 均方和	(8) F_{α}	(9) F_{β}	(10) 顯著水平	复相关系数 (11)
(12) 豫西 地区	(13) 旱 期	1~9	(14) (15) (16) 計	876.0949 169.2834 1045.3782	4 218 222	219.0237 0.7765	282.0547	3.40	0.01	91.55
	(13) 旱 期	10	(14) (15) (16) 計	158.5213 45.5419 204.0632	4 35 39	39.6303 1.3012	30.4568	3.90	0.01	88.14
	(17) 中 期	1~4	(14) (15) (16) 計	1582.0008 377.5089 1959.5097	4 294 298	395.5002 1.2840	308.0114	3.38	0.01	89.85
	(17) 中 期	5	(14) (15) (16) 計	220.8513 72.2041 293.0554	4 57 61	55.2128 1.2667	43.59	3.65	0.01	86.81
	(18) 晚 期	2~5	(14) (15) (16) 計	472.8888 78.0247 548.7185	4 118 122	118.1722 0.6443	183.41	3.50	0.01	92.81
	(18) 晚 期	1	(14) (15) (16) 計	308.1586 153.0253 361.1839	4 101 105	52.0397 1.5161	34.35	3.51	0.01	85.55
(19) 仁 蒙 地区	(13) 旱 期	1~9	(14) (15) (16) 計	1318.1298 162.4425 1481.0123	4 224 228	329.5325 0.7271	433.18	3.40	0.01	94.34
	(13) 旱 期	10	(14) (15) (16) 計	200.9218 32.1455 233.0673	4 28 32	50.7312 1.1480	44.19	4.07	0.01	92.51
	(17) 中 期	1~4	(14) (15) (16) 計	432.6967 196.8393 629.5360	4 259 263	113.1742 0.7600	148.91	3.39	0.01	83.43
(20) 呼 拉 口 地区	(13) 旱 期	1~9	(14) (15) (16) 計	1427.4527 107.7999 1535.2527	4 205 209	356.9632 0.5254	679.39	3.41	0.01	96.43
(21) 白 雲 河 地区	(13) 旱 期	1~9	(14) (15) (16) 計	892.7534 111.0597 1004.4551	4 157 161	223.1889 0.7115	313.70	3.44	0.01	94.28
	(13) 旱 期	10	(14) (15) (16) 計	113.5564 57.3079 170.8643	4 42 46	28.3891 1.3664	20.78	3.80	0.01	81.50
(22) 得 川 地区	(13) 旱 期	1~9	(14) (15) (16) 計	607.1660 181.0596 758.2255	4 103 107	151.7915 1.2281	123.60	3.47	0.01	89.49
(23) 新 县 地区	(17) 中 期	1~4	(14) (15) (16) 計	534.6013 276.5748 811.1761	4 107 111	133.6503 2.5143	50.26	3.30	0.01	81.18
	(17) 中 期	5	(14) (15) (16) 計	119.6748 32.7538 162.4287	4 33 37	29.9187 0.9925	30.14	3.80	0.01	88.61

Key:

1. Region
2. Kind of rice
3. Section
4. Source of error
5. Sum of square
6. Degree of freedom
7. Average sum of square
8. F ratio
9. F critical
10. Level of significance
11. Compound relative coefficient (%)
12. Zhang He Irrigation Area
13. Early
14. Regression
15. Residual
16. Total
17. Intermediate
18. Late
19. Changqu Irrigation Area
20. Mouth of Feng Jiang Irrigation Area
21. Bailian He Irrigation Area
22. Meichuan Irrigation Area
23. Chu County

Testing was done of the individual calculation formulas made up of constants in Table 3 using measurement data, and test results are shown in Table 5.

It may be seen from Table 5 that the degree of accuracy of calculations of formulas set up in this article is within 12 percent, and most are within 10 percent. This is a higher degree of accuracy for calculations than that of the individual element method and the few element method. The mathematical model put forward in this article is of general application; however, measurement data testing was for a limited number of years and from a small number of stations, so the reliability of results requires still further testing using measurement data from more stations. This article has as its purpose the recommendation of a regression method using many elements to set up a model for calculating the amount of evapotranspiration of paddy rice, and the coefficients, indices, and constants in the model have to be set on the basis of measurement data in each area. Use of this method to set up a calculation method requires only 3 to 5 years of daily data (for years of plentiful water, years of ordinary amounts of water, and drought years). In this way an accuracy can be derived that satisfies needs for formulas for production. Under China's circumstances today, this method can be provided for promotion and trial use.

Table 5. Comparison of Measurement Values and Calculated Values for Amount of Evapotranspiration During Entire Growing Period

(1) 地 区	(2) 稻 类	(3) 年 分	实 测 值 (4) (毫米)	计 算 值 (5) (毫米)	相 对 误 差 (6) (%)
(7) 张 河 灌 区	(8) 早 稻	1975	241.99	241.57	-0.44
		1976	376.43	370.66	-1.53
		1978	356.00	364.14	+2.29
		1979	425.28	389.97	-8.30
		1980	370.26	337.81	-8.23
	(9) 中 稻	1975	497.97	523.75	+5.18
		1976	515.79	513.64	-0.42
		1978	679.60	641.35	-5.63
		1979	626.13	603.96	-3.54
		1980	487.84	480.18	-1.57
	(10) 晚 稻	1974	430.23	452.90	+5.27
		1975	316.51	318.46	+0.49
		1978	381.23	384.41	+0.83
		1979	310.43	283.16	-11.26
		1980	239.61	246.59	+2.96
(11) 长 湖 灌 区	(8) 早 稻	1975	294.24	290.79	-4.57
		1977	442.16	459.46	+3.91
		1978	395.41	432.49	+9.38
		1979	371.18	342.91	-7.61
	(9) 中 稻	1965	419.22	423.21	+0.95
		1967	411.80	412.28	+0.12
		1969	498.91	494.31	-0.92
		1970	345.15	349.51	+1.26
		1978	611.87	674.64	+10.26
		1979	611.87	674.64	+10.26
(12) 荆 江 口 灌 区	(8) 早 稻	1972	382.65	407.25	+6.43
		1975	341.19	338.36	-0.83
		1977	354.82	353.92	-0.25
(13) 白 洋 河 灌 区	(8) 早 稻	1978	371.78	363.08	-2.34
		1979	354.01	336.71	-5.02
		1980	352.05	335.94	-4.57
(14) 南 川 灌 区	(8) 早 稻	1975	339.70	347.25	+2.22
		1976	394.47	399.65	+1.29
(15) 海 县	(9) 中 稻	1977	446.48	405.37	-9.21
		1979	514.72	481.71	-6.41
		1980	339.68	371.04	+9.23

Key:

- | | |
|---------------------------|-----------------------------|
| 1. Region | 6. Relative error (%) |
| 2. Kind of rice | 7. Zhang He Irrigation Area |
| 3. Year | 8. Early rice |
| 4. Measurement value (mm) | 9. Intermediate rice |
| 5. Calculated value (mm) | 10. Late rice |

11. Changqu Irrigation Area
12. Mouth of Feng Jiang Irrigation Area
13. Bailian He Irrigation Area
14. Meichuan Irrigation Area
15. Chu County

9432

CSO: 4007/8

'RENMIN RIBAO' ON PEASANTS AS MASTERS OF LAND

HK110420 Beijing RENMIN RIBAO in Chinese 27 Dec 82 p 5

[Article by Hu Erren [5170 1422 0117]: "The 800 Million Peasants Are Masters of Their Land"]

[Text] Whether the party principles and policies are correct depend on whether these principles and policies are in line with reality and whether they are in a position to truly guarantee the people as masters of their country and to fully mobilize the initiative of the broad masses of the people. To turn the 800 million peasants into masters of the land is of great significance in building a high socialist democracy.

Following the 3d Plenary Session of the 11th CPC Central Committee, agriculture in our country developed from being stagnant to being prosperous thanks to party policies for rural areas. Today, the broad masses of peasants are leading a happy life which they had not experienced since agrarian reform and the formation of elementary agricultural producers' cooperatives.

The broad masses of peasants have warmly welcomed the system of contracted responsibilities with payment linked to output, not only because they are happy about the prospect of becoming rich soon but also because they are happy about becoming true masters of the land. When referring to the peasants who have warmly welcomed the system, Comrade Wan Li said: "Peasants are happy because of two reasons. First, material interests and second, they are able to make decisions themselves. That is to say, economically speaking, peasants have gained actual material interests while politically they are enjoying a wide range of democracy."

To enable the 800 million peasants to become masters of the land is of great significance in building a highly socialist democracy. The tortuous path traversed by our country in building socialist agriculture shows that agriculture will be able to develop vigorously only when the broad masses of peasants have truly become masters of the land and can fully display their initiative and creativity. During agrarian reform, our party led the broad masses of peasants to become masters of the land, masters in building rural areas and masters of the country. In the early period of agricultural producers' cooperation, the party once again led peasants in

voluntarily organizing themselves and, as a result, the building of socialist agriculture was pushed forward into a new stage. It was a pity that later the party's rural policies gradually departed from the actual conditions in the areas of our country and from the broad masses of peasants. Eventually, we infringed upon peasants' material interest and politically we infringed upon their democratic rights. As a result, for more than 20 years, our agriculture basically made no progress. Following the 3d Plenary Session of the 11th CPC Central Committee, the CPC Central Committee decided that in the move to restore order, it was first necessary to step up the development of agriculture. It pointed out: "The first point of departure in defining agricultural policies and economic policies in rural areas is to fully display the advantages of the socialist system and fully display the initiative of the 800 million peasants. Ideologically speaking, it is imperative for us to step up socialist education among peasants and, economically speaking, it is necessary to show concern for their material interest while politically speaking it is necessary to guarantee their democratic rights. Departing from certain material interests and political rights, it will not be possible for any class to naturally display its initiative. Whether our policies accord with needs in developing productivity depends on whether these policies are able to increase the production initiative of the laborers." The decision of the CPC Central Committee to step up the development of agriculture has once again inspired the initiative of the broad masses of peasants. Thanks to the perfection of the party's rural policies, the initiative and creativity of hundreds of millions of peasants has been mobilized, they have become masters of the land and our rural areas have taken on a new outlook.

Our party has been able to lead the masses of the people because it has integrated the universal truth of Marxism with the reality of our country and it has been able to define the line, principles and policies that accord with people's interests, to mobilize the initiative of the masses and to lead the masses to become masters of all causes.

Our party is the vanguard of the proletariat while its purpose is serving the people wholeheartedly and leading them in gradually realizing communism. Party cadres are leaders of the people and yet they are the servants of the people and are not their masters. Following great victories won by the people under party leadership, some leading cadres have become arrogant and, intentionally or not, they have taken on the airs of heroes and masters of the people and consequently they have gradually become divorced from the people and reality. After the preliminary agricultural producers' cooperation developed into advanced agricultural producers' cooperation, there appeared "leftist" mistakes in the party's rural policies, production teams and peasants were deprived of their autonomy, a series of wrong methods were popularized and all this was termed by peasants as "giving command blindly," "working in a mess" and "everybody eating from the same big pot." For quite a long period, peasants were deprived of their autonomy and [word illegible] to production plans, production management, labor organization and distribution of income. Each day, peasants had to wait for a job assignment from cadres and listen to their arrangement. They had to obey even blind commands, tolerate unequal treatment and experienced

such things as being overworked, while at other times there was nothing to do, there were arguments over work appraisals and failure to correct cadres' forcible order. Other problems such as arbitrary deduction of the results of labor, waste and unequal distribution remained unresolved for a long period. Under these conditions, people's communes and production teams have failed to promote collective production, peasant households sideline production was once again under attack and the peasants' initiative in production was once again hampered. During this period, fine party cadres persisted in a good style of work such as combining theory with reality, keeping close contact with the masses and carrying out criticism and self-criticism. They followed the will, interest and needs of peasants and led the broad masses of peasants and rural cadres to oppose the wrong policies time and again. But they were once again subject to criticism, attacks and oppression. As a result, socialist construction in our rural areas was damaged.

The rural policies since the 3d Plenary Session of the 11th CPC Central Committee have been able to bring the dying situations in rural areas to life and an important reason for this change is that these policies have been able to really represent the economic material interests of peasants, and politically they have been able to guarantee peasants democratic rights. In addition, measures have been taken to correct the wrong policies that were not in the interest of displaying peasants' production initiative and developing agricultural productivity.

Thanks to the efforts made over the past three decades and more, most rural areas have been freed from miseries and some regions have become rich. But we must acknowledge that, generally speaking, the wide rural areas in our country are still poor. It is therefore understandable that peasants have ardently been required to introduce the system of contracted responsibilities on a household basis because it is a short way for them to become rich. But why is it that a number of comparatively rich or very rich regions have also requested introducing such a system? We visited a number of production teams with very high incomes and very good collective undertakings. These production teams at the beginning had no intention of introducing the system, nor did prefectural and people's communes' leadership have such an intention; but after making comparisons with their neighbors, the masses of peasants demanded introduction of the system. We asked some old peasants why. They said that they have autonomy with the system of contracted responsibilities on a household basis. With such a system, peasants have control over production, production management and distribution of labor achievements and they are able to rationally arrange their production time and spare time. The system has been particularly welcomed by female peasants. They said: In the past, we spent our days in the fields, no matter whether it was the busy season or slack season. Everything was under control and even when we did the work well, we were only given seven-eight work points. And after a whole day of hard work, there was a lot of household work waiting to be done. When we wanted to visit our parents, we first had to determine the countenance of cadres before we told them of our intention. Following the introduction of the system of contracted responsibilities on a household basis, we were able to carry out work more

flexibly and we could do more meticulous work while the heavy jobs are done by male laborers. When we finish our job earlier, we can go home. Farm work and household work are shared by family members and we are free to go to free markets or visit our parents.

These facts revealed to us a very important principle. That is to say, to judge whether the party principles and policies are correct does not depend on whether they accord with a certain doctrine or whether they are in line with the "directives" of a leading member, but depend on whether they are in line with reality and with the interests, will and needs of the broad masses of people and whether they can truly guarantee that the people are masters of their country and fully mobilize the initiative of the masses.

The introduction of the system of contracted responsibilities with payment linked to output has served as very important enlightenment for us.

The introduction and perfection of the system of contracted responsibilities with payment linked to output has gradually changed the work style of rural cadres. The work style of depending on the directives of cadres and their control has been gradually changed to the work style that is characterized by leading the masses through education and enlightening them to display their initiative and creativity; the method of sole reliance on leadership for order in solving problems has been gradually changed to the main working method of solving problems through the effort of the masses. It is a very effective method for solving the problems of rural cadres who are incompetent and who are faced with complicated and arduous jobs.

In introducing the system of contracted responsibilities on a household basis, how can the land be contracted to households? The land of a production team is very complicated, as some part may be fertile while another part may be poor, some land has sunlight and another part of land does not, some land has water and some land may be dry. There are also plots and slopes and big plots and small plots with alkaline or saline soil. The land has to be marked off for various households with a different number of family members. How can the land be marked off rationally? To us intellectuals who have no knowledge of the situations in rural areas, it is really a very difficult job. Therefore it is understandable that a number of cadres disagreed with the system on the grounds that it was difficult to rationally mark off the land. In fact there were arguments on many occasions in the course of contracting farmland. In this aspect, we have asked the opinions of some cadres and the masses and we have also come to understand the actual situations of some production teams.

An example is that the work of marking off the land is monopolized by cadres. That is to say, the cadres worked out a plan for contracting the land and after several meetings the plan was forcibly carried out. Even if cadres were unselfish, it was still very difficult for them to mark off the land fairly and rationally. Another method was that the land was marked off by the joint efforts of cadres and the masses. They first of all worked out a simple plan while the rest of the related work, such as discussing, working out concrete planning, putting forth and solving problems, are all handled by the masses themselves.

Frankly, it is really difficult to mark off the land fairly and rationally and to the satisfaction of all households and peasants. But with the former method, more often than not the peasants blamed the cadres and endless arguments ensued. But with the latter method, peasants knew that the marking off of the land was done according to their suggestions and therefore even if they were not satisfied with the result, they could only accept it. This is because the marking off of the land is carried out through repeated discussions and the best way possible; therefore even if a few people are dissatisfied, they cannot but agree. And the result is, all are happy and cadres are able to prevent trouble.

Over the past few years, our rural policies departed from the masses and it was really difficult for cadres to carry out their work. The work style and working method of solely relying on leadership often resulted in turning good things into bad, only to harm the masses and create difficulties for cadres. We must understand that although there are quite a number of cadres who are arbitrary and selfish, the majority of cadres are good; many cadres have gradually come to terms with forcible order, that it is caused by wrong policies and by pressure from above and therefore the broad masses of cadres in the grassroots levels are also victims.

Cadres could not but resort to forcible order because the wrong "leftist" rural policies could not but be carried out and because when cadres failed to implement such policies they were subject to criticism. If a cadre had various selfish ideas, he would certainly develop from giving forcible orders to beating, abusing and oppressing the masses.

The rural policies implemented after the 3d Plenary Session of the 11th CPC Central Committee are correct. They have represented the interest, will and needs of the broad masses of people and they have been warmly welcomed by the broad masses of peasants. Therefore persistence in implementing these policies provides a possibility for considerably decreasing cadres' forcible order. Correct policies have been able to mobilize the initiative and creativity of the broad masses of peasants and cadres. With changes in the work style and working method of cadres, the cadre-masses relationship characterized by cadres loving the masses and the masses respecting cadres will no doubt be gradually formed.

In the whole process of the introduction of the system of contracted responsibilities with payment linked to output, the majority of the cadres who were previously skeptical about or who opposed the system have eventually changed their attitude. A few comrades have made serious mistakes in this respect. In fact, long before the introduction of the system, these comrades failed to share weal and woe with the masses and they even thought differently. They did not care about the masses during the long period when the latter were experiencing difficulties. They were deeply interested in what the masses opposed and they arbitrarily opposed what was most welcome by the masses. Their attitude toward right and wrong and good and bad was contrary to that of the masses. During the long period that was characterized by "giving orders blindly," "working in a mess" and "everybody eating from the same big pot," the masses did not have enough to eat and

wear; but these comrades stuck to the old concept of "large in size and collective in nature" and they felt at ease; when the masses freed themselves from poverty and gradually became rich following the introduction of the system of contracted responsibilities with payment linked to output, they tried every means to obstruct the masses. Some others even took pleasure in others' misfortune and they were delighted to see problems cropping up. Although such comrades are very limited in number, they represent another type of teacher for us. Their serious departure from the masses served as an enlightenment for us.

The second of the three basic requirements that must be realized by the whole party and that is stipulated in the new party constitution is "serving the people wholeheartedly." The constitution stresses: "The party has no particular interest but instead has the interests of the working class and the broad masses of people." "In the whole process of leading the masses in their struggle for the realization of communism, the party always shares weal and woe with the masses and maintains close contact with them. No party members are allowed to divorce from and put themselves above the masses." It is hoped that the comrades who are bound by old concepts and who have different views and feelings from the masses will be able to draw lessons after studying the new party constitution.

Our socialist construction in rural areas is developing with each passing day and this situation requires us to continue to emancipate our thinking and study and solve new problems. Otherwise we will fail to meet the needs of the era. The comrades who had emancipated their thinking over the past period will no doubt lag behind should they become satisfied with their past achievements and stop making progress.

The core of Mao Zedong Thought is combining Marxist universal truth with the actual conditions of our country. In such a big agricultural country as ours, Comrade Mao Zedong drew lessons from past experiences and failures of the great revolution, creatively used and developed Marxism and took the road of achieving the victory of the revolution through encirclement of cities by rural areas. In the early days of the founding of new China, our party started construction from launching agrarian reform and the campaign of agricultural producers cooperation. Thanks to these measures, the national economy that was subject to damages for a long period was soon rehabilitated. Following the 3d Plenary Session of the 11th CPC Central Committee, the Central Committee was confronted with enormous and complicated problems. Consequently, it resorted to the principle of "orderly carrying out work in order of importance and urgency and gradually solving various problems." The primary work was to improve agriculture so as to free the 800 million peasants from their longstanding poverty and make rural areas prosper. This is a new achievement made by the CPC Central Committee in inheriting and developing Mao Zedong Thought under the new situations and it is a new example in raising the initiative and creativity of the hundreds of millions of people.

In his report to the 12th party congress, Comrade Hu Yaobang said: "Comrades! Lenin said that vigorous and creative socialism is created by the

masses themselves. No doubt, without the labor enthusiasm of the hundreds of millions of people and without hard work by various places and departments, it is impossible to vigorously develop socialist construction." Today, the initiative and creativity of the hundreds of millions of peasants have changed both the economic and political situations in rural areas, and such a change has played an important role in promoting the national situations. The situation in which the 800 million peasants have become masters of the land will play a vital role in our effort to build a high socialist democracy.

CSO: 4007/70

'RENMIN RIBAO' ON USING HILLY AREAS IN SOUTH CHINA

HK221105 Beijing RENMIN RIBAO in Chinese 9 Dec 82 p 5

[Article by Hou Xueyu [0186 1331 3558]: "On the Direction of Exploiting the Mountainous and Hilly Areas in South China"]

[Text] On the basis of his investigations, famous ecologist Comrade Hou Xueyu aired his views with regard to the direction of exploiting the mountainous and hilly areas in south China. He did not agree with the slogan of "obtaining meat from grass mountains in south China." He proposed that the mountainous areas in the south should rely mainly on forestry and that it would be good to carry out animal husbandry on a small scale and in a decentralized manner and to combine animal husbandry with agriculture, forestry and fishery. Whether these viewpoints are in line with actual conditions may be further discussed. Comrade Hou Xueyu did not confine himself to an abstract fixed concept. He faced production and construction, went deep into the first front, proceeded from actual conditions and energetically put forward questions and studied questions in the spirit of being one of the masters of the country. Such a spirit is worth advocating.

How to rationally exploit the mountainous and hilly areas which account for 70-80 percent of the land in various provinces (regions) in south China is a strategic problem which has an important bearing on the utilization of our country's land. According to the investigations I have carried out over the last 3 or 4 years in the provinces (regions) of Yunnan, Sichuan, Guizhou, Guangxi, Guangdong, Fujian, Hunan and Anhui, I herewith put forward my suggestions with regard to the direction of exploiting the mountainous and hilly areas in south China.

In the Mountainous and Hilly Areas of South China, We Should Mainly Develop Forestry (Including Economic Forests)

Relying mainly on forestry does not in the least mean that we should not carry out other agricultural production. In hilly areas where slopes are

gentle and on foothills where irrigation works can be built, it is necessary to develop agriculture. The peasants are experienced in and accustomed to breeding plant eating animals in a decentralized manner near a forest. But not only does this not conform with objective conditions, it also violates the principle of achieving good economic results to build large-sized modernized grazing farms in grass mountains and put forward the slogan of "obtaining meat from grass mountains." Why do I propose that we should rely mainly on forestry (including economic forests) in the mountainous and hilly areas in south China?

1. Annual precipitation in the mountainous areas in south China is generally 1,200-2,000 mm or more, and the heat can also meet the needs of various forest trees. Some people say that forests cannot grow in a mountainous area like Nanshan of Chengbu Autonomous Miao Nationality County in Hunan Province. This is not in conformity with actual conditions. I went there in particular for investigation and had a talk with three old peasants. They said that Nanshan was originally a forest called Daqingshan [Large Green Mountain], which was destroyed in a fire over 200 years ago. Now, in the Daping area we can still see the remnants of tree stakes over 1 meter in diameter. In the valleys 1,700 meters above sea level, there are still stretches of the remnants of miscellaneous forest trees. Herewith I would like to correct the mistaken idea that claims that forest or forestation cannot be restored in Nanshan and subtropical mountainous areas. As is seen in other subtropical mountainous areas, the grass growing in Nanshan in Hunan Province is the secondary vegetation of the degeneration of the forest after its destruction. Viewed from the weather conditions of the mountainous areas, it is appropriate and possible to develop forestry.

2. By planting trees in the mountainous areas, we can fully utilize space. Some grass and many kinds of plants cannot grow in between the limestones in many limestone barren mountains in south China where forest has been destroyed. But trees containing rich calcium can normally grow and fully utilize the space and light energy above the rocks in the mountains. Date trees, black tallows, thorny scholar trees, toons, palms, cypresses, winged celtises and elms can grow in places at a lower sea level. Lacquer trees, walnuts and catalpas can be grown in rocky mountains at a higher sea level. In addition, in some granite mountains at a higher sea level where soil is strongly acidic and earth layers are thin, it is recommended that we select appropriate trees and grow Huangshan pine trees, hemlocks, bright leaved beeches, Shihuihua catalpas, multiveined Qinggangs, Wenmu trees and Huaxiang trees.

3. The bush and grass layer in the forest can prevent soil erosion in the most effective way. In summer, there are often torrential rains in the mountainous areas in south China. To effectively conserve rain water that falls for a short time, besides reservoirs and mountain ponds, we must also build "green reservoirs." If there is no forest in mountainous areas, in a torrential downpour water and soil will be lost, and the water in the reservoirs will immediately be drained away. In this way, the reserve capacity of reservoirs will be reduced.

4. By developing forests in mountain areas, we can obtain the maximum production of both animal and plant life. In places of the same area, growing grass is the least effective way of producing living forms. In a subtropical forest, apart from lumber, the bush and grass under the tree branches have their own uses. Valuable traditional Chinese medicines like tianma (*gastrodia elata*), huanglian (*coptis chinensis*), dangshen (*codonopsis pilosula*), herbaceous peony and pseudo ginseng and other economic plants are the products of the subtropical forest. Moreover, many precious animals like rhesus monkeys, pangolins, civet cats and water deer, as well as economic animals like yellow weasels, badgers, masked civets, black bears, bamboo partridges and various kinds of birds are the products of forests in south China. Therefore, forests provide the warehouse supply of life forms. They are beneficial to the development of a diversified economy and sideline production.

5. In mountainous and hilly areas, we should, in the light of local conditions, develop the growing of various woody plants, oil-bearing crops and other economic trees. We should also develop the production of grain. Tung oil trees, rape trees, Chinese chestnuts, walnut trees, date trees, persimmons, tea trees, orange trees and tangerine trees require growing environments with excellent irrigation. Conversely, they cannot grow well in plane areas where irrigation is not excellent.

Grass Mountains in South China Are Not Suitable for Animal Husbandry

In south China there is great potential for developing animal husbandry. But I doubt the slogan "obtaining meat from grass mountains." My reasons are as follow:

1. From the angle of the output and quality of fodder, grass mountains in the south are different from those in the northeast. They comprise secondary herbaceous vegetation left over from the historical destruction of subtropical or tropical forest. The grass on the acid soil here is mainly yegu grass, five-joint awn and mottled cogon grass. A fibroid change rapidly takes place after they head and blossom. As a result, their nutritive value is very low. Thirty to 40 mu of grass slopes is just enough for breeding one cow. In addition, the withered period in mountainous areas lasts for as long as several months, and the output of grass is so low that it cannot meet the needs of a large number of cows and sheep. Tiemangqi of the herbaceous brake family is not edible, and the brake vegetable is poisonous to cattle. Twisted yellow cogon grass on granite soil is thorny, and cows do not eat it. Near Dachang, Qinglong County, Guizhou Province, there is a people's commune called Sanwangping People's Commune, which is situated 2,000 meters above sea level. In 1958, this commune carried out centralized cow breeding in a grass plot. Due to the shortage of grass, many cows died.

2. Viewed from the angle of preventing soil erosion, many acid mountain areas in the south must be improved so that grass of the pulse family can be grown. To improve the soil we must dig it. In this way, loss of soil will take place. In addition, to supplement the shortage of fodder in the

withered period that lasts for several months, we must rely on ensilage. On the surface, growing herbage and corn in mountainous areas is for animal husbandry. But in reality, it is cultivating land for agricultural production. Herding cattle on grass slopes will accelerate soil erosion.

3. Let us consider the angle of the character of the livestock. Some milk cows, such as black and white milk cows, were originally from the plane regions of Holland. It is hard to imagine them adapting themselves to mountainous areas which are humid and have high slopes. Moreover, their concentrated fodder has to be transported by plane. This is uneconomical. If small-scale livestock breeding can meet the needs of extensive management, oxen which are good at mountain climbing may be used for such breeding. But such oxen are too small in terms of build, and they grow very slowly. If they are bred on a large scale for producing meat, the production efficiency is low, and it is not economical either.

4. Some places sometimes claim to have several hundred thousand mu of grass mountains. This is often not the case. For instance, in March 1982, I went to Qinglong County, Guizhou Province, to carry out an investigation. The bureau of animal husbandry of the county said that they have 980,000 mu of grass mountains. After a detailed investigation, I came to know that of the 980,000 mu, granite soil with a very thin layer of earth is 280,000 mu; granite barren mountains without any grass at all 260,000 mu; and soil mountains and uncultivated land 440,000 mu, on which mainly tiemangqi and brake grow.

According to my investigation of Nanshan state-run exemplary ranch in Hunan Province in June 1982, the slogan of "obtaining meat from grass mountains" was actually not very valuable. In the mountains, there is now 8,400 mu of man-made grassland, 909 milk cows (of which, 361 cows can produce milk), 1,174 meat oxen, 1,003 sheep and 104 bulls kept for covering. Since 1973, 8 million yuan has been invested in this large-sized ranch. From 1979 to 1981 in particular, this ranch spent 940,000 U.S. dollars in foreign remittances and 1.47 million yuan in inviting foreign specialists. Herding cattle in a centralized manner in mountain areas can cause many problems. For instance, growing concentrated fodder such as corn, vegetables and radish on mountain slopes is in reality cultivating the mountain slopes. This causes serious soil erosion. Some concentrated fodder such as soybeans and wheat bran must be transported up to the mountains from 100 kilometers away. The coal required by the milk powder factory in the mountains must also be transported from 200 kilometers away. After the milk powder is produced, it has to be transported down the mountains. As a result, transportation expenses are high. Due to excessive herding, the vegetation rate of natural grazing land will drop by 60 percent, and poisonous brake and dafang grass will gradually gain a superior position. Because ranches are run in a centralized manner, people have to fell forests at will to get firewood. In 1975, there was a thick forest near the ranch office. Now two-thirds of the trees have been felled. Because the forest has been destroyed, the birds in the forest have no place to dwell and no food to eat. As a result, the insects in the forest are becoming more destructive to herbage due to lack of natural enemies.

I do not mean that animal husbandry cannot be developed in south China. The problem is that of what road we should take. In south China, there exists great potential for developing animal husbandry. In breeding cows, pigs, sheep, horses, rabbits, chickens, geese, ducks and bees, the localities have a variety of breeds and resources which are suited to the local weather and fodder. There is also a great variety of resources of fodder. Thick grass grows along roads and rivers. In particular, water fields after a harvest are good places for tending ducks and geese. In addition, straw, corn stalks, soybean leaves, sweet potato vines, broad bean stalks and leaves, water gourds, water lettuces and water peanuts are all good fodder. There is also grass, which can be used for feeding rabbits. In tropical weather, humid places or places with good irrigation conditions are most suitable for growing high-yield tropical elephant grass and Brazilian lucerne. The per mu yield of elephant grass is 50,000 jin, and its annual yield is generally 20,000 jin. Each cow needs 20,000 jin annually. For feeding cows, there is concentrated fodder like the melon family, cassavas, sweet potatoes, peanut cakes, rapeseed cakes, soybeans and corn. In subtropical areas, we can grow Sudanese grass. Its per mu yield is 15,000 jin per year. Green fertilizer crops like trumpet creeper, milk vetch and beans can be used as green fodder. The sideline products of rubber fruit, coconuts and sugarcane are concentrated fodder of superior quality. In coastal areas, when the tide rises, fishing is carried out. At low tide, pigs are tended and ducks begin to look for food. For instance, raising pigs around fish ponds as carried out near Hengyang city of Hunan Province is a form that combines both fishery and animal husbandry.

I think that the development of animal husbandry in south China should generally be carried out in a decentralized manner, except for that which is carried out on a small scale and in a centralized manner under certain conditions (for instance, in places near the suburbs). The form of combining animal husbandry with forestry, agriculture and fishery must be adopted. This is the most effective form of management. The slogan of "obtaining meat from grass mountains" and building bases for animal husbandry on a large scale will inevitably create contradictions between forestry and animal husbandry and even cause large-scale soil erosion. This form of management is not in line with the principle of achieving good economic results. Besides, it is very difficult to realize.

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'GUANGMING RIBAO' ON RESPONSIBILITY SYSTEM

HK120415 Beijing GUANGMING RIBAO in Chinese 30 Dec 82 pp 1, 4

[Article by Xue Yan [5641 1693]: "Clearly Explain the Socialist Nature of the Contract Responsibility System of Linking Remuneration With Output"]

[Text] Now, everyone admits that the rural situation is unusually favorable. The peasants' granaries have never been so full as now. Their income has also never been so large. The production responsibility system has helped the peasants get rid of poverty and guides them on the road to wealth. But many people are still at heart a bit scared. Questions often disturb them: Is the responsibility system acceptable or unacceptable? Or is it likely to change in future? The responsibility system is good, but is it after all "socialist" or "capitalist" in nature? Some people even say that such a thing as the responsibility system "makes a good showing but is doubtful in nature." Those specialized and priority households that have got rich through hard work are especially full of doubts. They are afraid of getting suddenly rich one day only to be again accused of showing the "remnants" of capitalism.

Such a situation reflects the vague idea of the production responsibility system held by some cadres and peasants. This merits our attention. It tells us that what is felt by people is not really understood by them. Only by understanding it in theory can they feel it more deeply. This calls for reasoning things out. At present, in the countryside, we must conduct penetrating publicity, study the spirit of the 12th CPC National Congress, and really achieve the aim of relaxing policy restrictions. To this end, we must first continuously get rid of the restraining influence of "leftist" ideas that has so far affected a number of rural cadres. Such "leftist" fallacies in practice are more likely to be recognized by people. But where the question of theory is concerned, what is "leftist" is also often likely to assert itself in people's minds. The reason is that the cadres have still not got a clear idea of things where principles are concerned. If cadres have a clear idea of things and dare to come out in support of the mass enthusiasm for getting rich through hard work, then the people's fear of change will easily dissipate. Therefore, in doing ideological and political work in the country, we must focus attention on party members and cadres. We must link reality with an effort to make it clear to the cadres and the masses why "leftist" ideas are wrong and have a

harmful effect on socialist modernization. We must reason things out instead of describing things just as they are. In carrying out any policy, we must clearly explain the reasons why. We should not just tell people what is good or what is bad and what should or should not be done—reading over the party's policy in its entirety, word for word. Rather, we must spell out the reasons and explain why we should not act this way and should instead act that way. The peasants are most realistic and always respond to the party's policy in light of their own personal experiences. Therefore, to reason things out in doing ideological and political work among peasants is to spell out the principles capable of convincing peasants in light of what happens around them and what happens in their relevant village or team, or the neighboring village or team. If we do not reason things out but just describe things as they are, or if we depart from reality and describe theory in hollow terms, we cannot solve our problems. Of course, to reason things out takes more effort. It calls for making penetrating investigations and studies. We must have a thorough idea of what is in the minds of the masses, what are their worries, what are their doubts and even what are their dissenting views. We must really feel the pulse of the masses. Only in this can we hit the nail on the head in reasoning things out and spell out what is in the minds of the masses, leaving them satisfied and convinced.

Why is it that some comrades are doubtful about the contract responsibility system of linking remuneration with output? The main reason is that they do not understand the socialist nature of this responsibility system. This is due to the fact that for years, it has been drummed into the heads of the peasants that socialism means nothing but land, draft animals and agricultural implements being collectively owned and used in a unified manner, or concentrating labor and contributing labor in a unified manner, or basing distribution on the number of work points earned through work. Now given land cultivated on a contract basis, draft animals and farm implements handed out to various households, and labor separately performed by individuals, the products realized often first pass through the hands of households or individuals and then go to the higher levels on a contract basis. As things appear, the practice is almost the reverse of what used to be in the past. It is indeed different from the "socialist pattern" known in the past. Therefore, we should clearly understand that there is no fixed pattern for the socialist way of management. What determines the nature of socialism is such fundamental systems as public ownership, distribution according to work, and so forth and not such concrete patterns as production, distribution and management. The starting point and the end result of the socialist system call for helping the development of socialist production. Any concrete pattern or concrete way that is conducive to the development of socialist production should be adopted by it. At present, the contract responsibility system of linking remuneration with output practiced in the countryside is a new pattern for the socialist agricultural cooperative economy created by the peasants themselves. It agrees with the existing level of productivity in our countryside and its agricultural features, as follows: 1) Though handed out for separate cultivation, land is still collectively owned. It cannot be sold or bought. Nor can it be used to exploit others or be freely used for building housing, baking

bricks, and so forth. Farm cattle, plows and other medium-sized and small farm implements have indeed been allotted to various households. But this only helps taking better care of them and helps intensive farming. Irrigation works and other large-sized production facilities are still under collective control, or are left to the care of some specialized households. They cannot be controlled by any individual. 2) Labor is performed on a household basis and even on an individual basis. But the fundamental aspects of the whole process of production, such as the area planted in grain, cotton and other important crops, their output, their output value, the quantity retained for the collective on a percentage basis, and so forth, are all determined by the collective under the guidance of state plans and are clearly spelled out in the contracts jointly signed by the collective and peasant households. 3) As to the distribution of products, the order of distribution has been reversed. But this is more conducive to the implementation of the principle of distribution according to work. The contract for remuneration linked with output is based on the "standard output," as understood by all the masses, as the criterion for distribution, in regard to the way of distribution. It calls for adequate portions to be handed over to the state and retained for the collective on a percentage basis, while the remainder, including what exceeds the production quota obtained by the workers through hard work, all goes to the workers themselves. This is a simplified procedure. It also helps better the realization of the principle of distribution according to work. "The all-round contract system works in a direct way and makes no detour." Therefore, the masses have great love for the contract responsibility system. An important reason for this is inevitably the new development that has marked the way of distribution within the agricultural economy.

It is very clear that the contract responsibility system upholds the fundamental socialist principle, whether in regard to the ownership of land and other important means of production, or in regard to the pattern of work and the way of distribution. Of course, this great creation by the Chinese peasants is still in the process of development and improvement. At present, a number of specialized households have appeared in many rural areas. Some of them are specialized households working on a contract basis. Some are specialized households operating on their own—households that started out with the development of family sideline occupations. Many of them are beginning to carry out a new kind of combination. This new kind of combination is by no means a matter of retracing the old road to 3-level ownership with the team as the foundation. It has been promoted by the needs of the development of specialized production and is a many-sided cooperative economy that has developed to include production, supply and sales, technical services and other fields. In some cases, it has broken through the confines of existing communes and brigades and even areas. The coexistence of the contract responsibility system of linking remuneration with output, the cooperative economy in various forms and the individual economy playing a supplementary role in the countryside is a sign of great vitality. One operation is on a small scale and another is developing in the direction of specialization and socialization. This represents the valuable experience of socialist agriculture with Chinese features and a road that must be traversed.

Some peasant households that have got rich through hard work are afraid of being found out. This is also because for many years absolute egalitarianism marked by taking unified steps, bringing income to the same level, and so forth has been equated with socialism, and the effort to enable a number of the peasants to get rich first has been associated with polarization. We must realize that since socialism calls for the practice of distribution according to work and commodity production, differences will of course appear. If a number of people in the countryside first get rich, this is entirely normal and is compatible with the laws of economic development. The socialist principle of distribution according to work will enable people to become rich, to different orders. But so long as we correctly implement the party's policy, we can avoid polarization, encourage the workers to learn from the advanced, stimulate the development of the whole rural economy and really head for common wealth.

Now, new things appear in the countryside almost every day. In our approach to them, we must assume an attitude of protecting and stimulating the development of production. The specialized households and specialized groups in many areas have energetically tried to raise money to enlarge the scope of operation. Some of them have devoted themselves to hauling goods for sale from remote areas, procurement, or commercial transportation with hired tractors or cars. These activities mostly meet the needs of the development of production. We should take appropriate measures to relax restrictions; adopt the guideline that calls for taking advantage of the favorable situation and taking different countermeasures with different conditions in mind; and energetically render support and help. Given this as a prerequisite, we must strengthen management and strive to achieve lively development and freedom from chaos. As to some established practices of mutual aid in the countryside and cases where individual households with special skills take on one or two helpers and a few apprentices, this does not fall into the category of hiring workers and is allowed. This approach on our part will help the more extensive mobilization of rural labor, funds, resources, techniques and other potential to develop grain production and a diversified economy and promote commodity production and the exchange of commodities under the guidance of state plans. This will stimulate the growth of the rural socialist material foundation. Concerning an extremely small number of people who run afoul of state policies and decrees and seize every chance to reap fat profits, they should be opposed by the masses and condemned by public opinion. In serious cases, legal discipline should be imposed. This is a far cry from the case where the masses of peasants get rich through hard work.

In the report of the 12th CPC National Congress, it was pointed out: "The production responsibility system in various forms introduced in the countryside in the past few years has further emancipated productive forces. It must be upheld on a permanent basis. We can only gradually improve it on the basis of summing up the actual experiences of the masses and can never make any hasty change in defiance of the wishes of the masses. Still less can we retrace the old path." The Chinese peasants have enthusiastically supported the Third Plenary Session of the 11th CPC Central Committee and the 12th CPC National Congress, because the central policy is so agreeable

and inspiring to them. In the introduction to the "Critique of Hegel's Philosophy on Law," Marx pointed out: "So long as theory can convince people, it can control the masses. So long as theory is thorough, it can convince people. By being thorough, we mean getting hold of the fundamentals of things." ("Selected Works of Marx and Engels," Vol 1, p 9) The fact of introducing the contract responsibility system of linking remuneration with output has effectively convinced people. But at present, theory still falls far behind reality. In our theoretical work, we must promptly sum up the creations by the masses and raise our own level, energetically serving the building of socialism with Chinese features. Otherwise, we are very likely to make historical mistakes. In doing ideological and political work in the countryside, we must righteously make known to the peasants such fundamental principles as the socialist nature of the production responsibility system. Through large amounts of elaborate and conscientious, and penetrating and concrete work, we must strive to rid the masses of peasants of their doubts of all kinds in this respect. This is an urgent task of great importance in doing ideological and political work among peasants in the countryside at present. While linking reality with the conduct of education in policy, we must never for a moment relax our efforts in conducting education among peasants in love for the motherland, love for socialism, love for the collective and love for the party. Thus, people will not focus their attention on just the building of materialist civilization and even just confine themselves to the pursuit of material interests. We must cultivate the peasants, so that they become people who have ideals, a sense of morality, a cultural background and respect for discipline. With the political consciousness of peasants raised, we can further emancipate the mind, fundamentally strengthening confidence in implementing the party's policy and displaying still greater socialist enthusiasm in correctly handling the relations among the state, the collective and the individual and contributing toward the building of a prosperous and powerful new countryside.

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'RENMIN RIBAO' DESCRIBES RESPONSIBILITY SYSTEM

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[Article by Zhang Guangyou [1728 1639 0645] and Li Kelin [2621 0344 2651]:
"What Must Be Stressed in Perfecting the Production Responsibility System--
Sidelights on the National Meeting of Agricultural Secretaries"]

[Text] At present, the production responsibility system in various forms has been established nationally in the countryside. The system of contract responsibility with payment linked to output and with the household as a contract unit is now a dominant form. The peasant masses describe this system as "responsibility is clear, interest is direct, method is simple and convenient, peasants enjoy autonomy." They eagerly hope that this good method can be maintained for a long time and be gradually perfected. This is the key to the development of the excellent situation in the countryside and is a question that a vast number of rural cadres and masses are concerned with. At the recent national meeting of agricultural secretaries, some secretaries of prefectural and county party committees who attended the meeting expressed their opinions and views on this question in connection with their local situations.

The First Point Should Be Continuing To Enhance People's Understanding

The question that people discussed more deeply was how to understand and approach the system of contracting responsibility with payment linked to output. Through controversies, practice, comparisons and selection over 3 to 4 years, fixing output quotas and sharing out farm fields to households has become the most popular form which is warmly welcomed by peasants. In the areas where this system was adopted earlier, the way leading to a healthy development was opened up after the system had been continuously perfected. The areas which followed suit later have also effected development and some have even surpassed the old-timers by absorbing other people's experience. But a small number of cadres in some areas were still not convinced and not willing to adopt this system. Compelled by the situation, they relinquished leadership and let the masses spontaneously partition fields and other collective assets. Thus many problems exist in those areas. In some brigades where leading bodies have been paralyzed, there are even more troubles. Only by doing a great deal of work can the responsibility system be healthily established in those places. Apart from that, in a very

small number of places, when the masses wanted to take the method of fixing responsibility to households and to change the existing forms of labor organization and payment, the leaders barred the way with various excuses and refused to give peasants their right to choose whether to adopt the responsibility system. Though the number of cases of this kind is not great, it is still necessary to pay attention to this phenomenon. Viewing the situations in various areas, it can be said that the development of the responsibility system is in essence a course of leaders' thinking gradually coming to conform with the objective reality.

Quite a few comrades attending the meeting felt that one of the important experiences in the practice of recent years is that leading cadres must first have a correct guideline of thinking. No matter which specific responsibility systems are to be taken, they should always proceed from local conditions and show respect for the masses' will. They can only persuade the masses to take a system which will be the best in giving play to their initiative and creativity, and can never force the masses to accept it by issuing mandatory orders. In view of the current situation, attendants felt that it is particularly necessary to pay attention to the following problems of understanding: 1) Being content with the existing state of affairs and having no desire to seek new progress and to study and solve new problems and new demands raised by the masses; 2) failing to follow the principle of handling integration and division of work in accordance with actual conditions but improperly placing stress on integration or hastily organizing specialization and new combination bodies without regard to local conditions. As for the places where the masses are so far still prevented from adopting a responsibility system, the main reason is because local cadres have not yet broken through the old conventions in their minds. Only by enhancing their understanding can this situation be changed.

Many comrades pointed out that there is a dialectical approach in the minds of the masses who hope the responsibility system can be stabilized and perfected. By hoping the system will be stable it is meant that the peasants hope such a good method can remain unchanged for a long time; at the same time, the peasants also hope that the system can become more reasonable and perfect. Though peasants like the method of fixing responsibility and sharing out the means of production to households, they also hope to organize integrated operations to handle affairs, such as irrigation projects and plant protection, that individual households have no ability to handle. Perfection itself is a concept referring to a developing change. What seems to be perfect today may become not so perfect another day when production has developed and needs to be further improved. This is an inherent law of things in development and not a subjective proposition. In short, the will of the masses is that "the policy should not change, but the methods should be perfected."

Many leaders of prefectural and county party committees in Shanxi, Jiangsu, Shandong and Hunan cited numerous vivid cases in their practice to illuminate the experience and prospects of the production responsibility systems in the course of development and improvement. Comrades from Jiangsu said:

In Yixing County which is situated in the southern part of the province and has a fairly high economic development level, the method of distribution by fixing output quotas to households has been taken on the basis of practicing specialized contracted and integrated operation of agriculture, industry and sideline occupations. At the same time, the production responsibility system has been further improved through the method of unified readjustment of incomes. Comrades from Shandong said: The Aiguo brigade in Luxian County led by Lu Hongbin, a national model laborer, has been a progressive unit for a long time and all-round development of agriculture, industry and sideline occupations has been scored there. By introducing other places' experience and smashing the old conventions, they adopted the method of "signing specialization contracts and handling distribution by fixing responsibility to households," relinquished the method of appraisal of work done and calculation of work points earned and simplified the method of distribution. As a result, the initiative of both the collective and the peasants has been brought into better play and this has led to a new development in production. Cadres and the masses unanimously agreed: "When the responsibility system is adopted everything becomes easier to handle." Practice in these places shows that the system of fixing responsibility to households or groups with payment linked to output is not conditioned by the level of productive forces and the complex of operations and it needs to be continuously developed and improved.

Many vivid cases have deeply enlightened people. A responsible comrade of a prefectural party committee in Hubei said: The reason for failing to do a good job in practicing the responsibility system in the past is mainly that our ideas and understanding were not unified and we failed to correctly understand the relationship between cooperation and division of work. Some cadres feared that division of work was equal to "individual farming"; while the masses feared that cooperation would lead to the former practice of "eating from the same big pot." Now it is clear that the system of fixing responsibility to households under the unified management has a wide adaptability in the countryside throughout our country. Comrades from Shanxi said: It is particularly important to understand and explain clearly the socialist character of the system of fixing responsibility to households with payment linked to output, because the masses fear that it will be changed and cadres fear that it is not socialist in character. Now if they realize that this responsibility system is a new creation of Chinese peasants in taking the socialist road, they will go into active action.

The Key to Perfection Still Lies in Practicing, Contracts

What concrete measures should be taken for perfecting the responsibility system? Conditions are different between the north and the south and stress should be different between the areas where the responsibility system was adopted earlier and the areas which followed suit later. In the areas where commodity economy is fairly developed, people are improving various responsibility systems of fixing output quotas and linking them with payment, and at the same time, by carrying forward the advantages of the method of contracting responsibility to households, they are further perfecting the existing systems of labor management and distribution. In the

areas where facilities for unified management and collective production are comparatively inferior, according to peasants' demand, projects such as plowing by tractor, plant protection, transport and the construction of field and irrigation system that individual households find it difficult to handle are arranged in a unified way and the method of specialization contracts has been taken and gradually perfected. Now even enterprises run by communes and state-run farms are also considering the adoption of the method of specialization contracts so as to reform the current management system.

Many comrades pointed out that along with the development of commodity production, the system of contracting responsibility with payment linked to output has been developed intensively and extensively. It has developed from farming to forestry, animal husbandry, fishery; from agriculture to industry, sideline occupations and commerce; from some underdeveloped areas to all other areas; and the scope of this system has continued to extend with more and more projects being subject to contracts and more and more flexible methods being adopted. Comrades from Guangdong said that in their province there have been five kinds of contracts: production contracts, technology contracts, economic contracts, development contracts and business contracts. Now development is still continuing. Contracts are not only practiced between different teams and communes but also between different counties and prefectures. By so doing, people can bring their initiative into play and the vast mountainous areas, wilderness, beaches and lakes have all been developed. Under the system of contracts, idle labor force, idle funds, idle resources and idle technology have all been mobilized and combined to perform their functions. This has given rise to various new economic combination bodies and the system of contracting responsibility with payment linked to output has been further improved in the course of development and thus formed strong productive forces.

Both in the south and in the north, when people talked about the key to the perfection of various responsibility systems, they never left the topic of "contracts," and contracts are of course the core. The relationships of various contracts should be properly handled according to different conditions so as to combine unified management with household contracts and combine the superiority of collectives with the initiative of individuals. Some comrades described that people previously feared that the over-elaborate division of work would not be proper, but now they have come to realize that both division of work and unified management should be handled by means of signing contracts. By contracting various jobs, integrated operation and division of work can be rationally handled. According to specific conditions, jobs can be respectively contracted to households or groups or be handled in an integrating way. This can give play to both the superiority of collectives and the initiative of individual peasant households. Concrete methods for practicing contracts may be worked out according to specific conditions and be flexibly applied to various jobs. The method of contracts can stop losses that an enterprise has incurred for many years and can enliven a long-term stagnant situation. It can not only overcome poverty but can also create wealth. In the face of all these incontestable facts, people cannot but be convinced.

The system of contracting responsibility with payment linked to output has not been carried out for a long time. When discussing the changes in understanding in recent years, many leading comrades of prefectural and county party committees put more of their time in considering what they should concretely handle after the conference. Anhui is a province where the responsibility systems were adopted earlier. Comrades from Anhui emphatically pointed out that it is still necessary to solve problems concerning understanding in perfecting the responsibility systems. They said they would place stress on the three systems: the production responsibility system, the contract system and the post responsibility system for cadres. Through carrying out the three systems, they can readjust the relationships between the state, the collective and the individual. Comrades in the Jinzhou prefectural party committee of Hubei Province said: When solving cadres' understanding problems, they will continue to solve the problems concerning the contracting of mountain forests, water surface, machines and plant protection. Comrades from Jiangxi said that besides continuing to perfect the contracting of farm fields it is necessary to effect the responsibility systems on the handling of orchards and forestry production. Responsible comrades of the Xinjin County party committee in Sichuan particularly stressed the point that problems left over after the system of contracts with payment linked to output is adopted should be properly solved. This includes the handling of financial affairs and the checking up of materials and accounts. Contracts should be properly concluded for forestry and animal husbandry. There were several points that were mentioned by many comrades: 1) Properly grasp the training of cadres. In this aspect Shanxi has good experience. The responsibility systems were adopted comparatively late in this province, but because the training of cadres was tightly grasped, people's thinking was fairly unified and actions were fairly harmonized so the situation throughout the province is now fairly good. 2) Further perfect the contract system. Attendants pointed out that though contracts have been concluded in all production teams, quite a few teams have not yet perfected their contract systems. Some have only concluded grain contracts but have no contracts for diversification. Some contracts have only terms for the turnover by peasants but have no terms for the guarantee that the state and collectives should give to the peasants. Contracts should clearly specify the obligations of both contractors and the parties which contract things out so as to clearly specify the state plans, collective requirements and individual responsibility. In order to perfect the responsibility system, it is necessary to complete and perfect the contract system. This must be tightly grasped and put into practice. 3) It is necessary to check up materials and accounts and perfect the financial system and to protect collective property. 4) Strengthen the work of popularizing agricultural science and technology. 5) Help difficult households, soldiers and martyr's families. Properly arrange the lives of the households enjoying the five guarantees.

Having a Down-to-Earth Style of Work and Taking a Broad View of the Future

At the conference, attendants talked a lot of the new situation in which commodity production has developed in the countryside along with the pursuit of the system of contracting responsibility with payment linked to output.

In some areas where production has developed rapidly, a number of specialized and key households have emerged among the contractor households that specialize in handling some particular production items. The development of commodity production in turn demands the strengthening of service work before and after production, the opening up of circulation channels and the coordination of socialized production. Some new combination bodies consisting of several or a few dozen households which pool their funds and cooperate their work have emerged as the times require. They run the processing industry, transport business, commercial and other service trades. Some have broken through the old framework of "the three-level ownership of the means of production with ownership by the production team as the basic form" and developed into a new phase. People can perceive from this development, the trend of the development of the system of contracting responsibility with payment linked to output and the prospects of the Chinese-style socialist agricultural modernization. Many comrades said: While facing this new situation, we must keep our brains calm and must see that those phenomena are still small in number. We must pay attention to them and support them, but at the same time, we should never follow the trend by placing stress exclusively on a small number of outstanding cases without regard to reality, as we did previously. In many areas the responsibility systems have now just been practiced for 1 or 2 years, so the potential is still great. While taking a broad view of the future, we should still have a down-to-earth style of work. Comrades of the Jiaxing prefectural party committee in Zhejiang said: In the areas where diversification is fairly developed, peasants do not like to undertake specialization contracts exclusively without being linked with a portion of land. Most households are still handling multiple industries with one as the major trade. The business result of this kind of household contract is the best. Even the cleverest team leader cannot arrange production as skillfully as one of these households which can perfectly display their initiative and create high returns. Some comrades said: The viewpoint that sets the all-round contracts against specialized household contracts and sets household contracts against specialization and socialization does not conform with reality. Practice shows that the system of contracting responsibility with payment linked to output on the household basis is suitable to most areas. Only the specific contents will be different due to the different development levels of production.

In the problems reported by various places there is a viewpoint that needs to be noticed. Some people tend to think that the operation on the household basis is "small and comprehensive" and does not help the development of socialized mass production. So they argue that "specialized integration" should be promoted by making use of this favorable moment so as to speed up the realization of specialization and socialization. By citing a large number of facts, attendants said that if we direct the work of perfecting the responsibility systems with this idea as the guideline, we will inevitably go against reality and reap a result opposite to what we wish. In view of the economic conditions and management levels in China's rural areas, the household operation still has great potential and needs a stage to be stabilized, completed and perfected. It is inadvisable to hastily knock together some forms of "specialization and integration." Of

course, as for the places where the conditions for specialization and integration have been ripe, we should adroitly guide actions according to circumstances and should not limit or hold back the development. On the other hand, in places where conditions are not ripe and the masses have not demanded integration, we should never "try to help the shoots grow by pulling them upward." Comrades at the meeting generally felt that at present the potential of household contracts is still far from being brought into full play. Even when specialization and socialization has developed in future, this form of small-scale household operation should still not be recklessly negated.

From the beginning to the end the conference was permeated with a realistic spirit and studied problems concretely, prudently and meticulously. Participants generally said that the better the rural situation, the more down-to-earth style of work we should have. To effect this, we must first go deeply into reality. A comrade in the Shanxi provincial party committee said with deep feeling: "If one fails to go deep into reality, one will not understand to what degree the damage was caused by the previous 'leftism,' to what degree the peasants led a hard life and to what degree the peasants are joyful now." Practice has proved: "If one goes deep into reality to grasp the actual situations of the countryside, one will certainly emancipate one's mind and do work more actively." Some comrades said: "Only by going deep into reality to make surveys and study can we share the same feeling and ideas with the peasants and maintain a unanimous political standpoint with the party's central leadership." Many comrades also hoped that theoretical and propaganda workers should go deep into reality so that they can study problems on the basis of the masses' practice and make correct explanation on the system of contracting responsibility with payment linked to output.

Many attendants said that one of the important results of the conference was that people unified their understanding of the system of contracting responsibility with payment linked to output, further realized the socialist character and development prospect of this system in theory and in practice, and realized their glorious tasks in front of the huge changes in the countryside. All of them are now full of confidence in the early realization of socialist agricultural modernization!

CSO: 4007/70

WANG ZHEN ATTENDS DAIRY ASSOCIATION INAUGURAL

OW180535 Beijing XINHUA Domestic Service in Chinese 0736 GMT 16 Dec 82

[Text] Beijing, 16 Dec (XINHUA)—The inaugural meeting of China Dairy Cow Association was held in mid-December in Beijing. Wang Zhen, member of the Political Bureau of the CPC Central Committee, attended the meeting to extend his congratulations. Lin Hujia, minister of agriculture, animal husbandry and fishery, made a report at the meeting. Comrade Wang Zhen urged everyone to cooperate with each other and to strive to beef up the production of milk in order to make contributions to revitalizing the Chinese nation and creating a new situation for the building of socialism.

China Dairy Cow Association is a mass organization under the direct leadership of the Ministry of Agriculture, Animal Husbandry and Fishery for the development of China's dairy industry and the breeding and scientific study of dairy cows as well as the coordination of the work of various departments concerned. The establishment of this association has an important bearing on speeding up the improvement of the cattle breeds and increasing milk production in order to meet the people's needs.

On learning of the establishment of the China Dairy Cow Association, Comrade Wang Zhen, disregarding his old age, came to the meeting site in the outskirts of Beijing amid freezing weather. He happily congratulated everyone on the achievements made in the past, particularly in the promotion of frozen semen. He urged all dairy cow workers and comrades of the departments concerned to be resolute in promptly rectifying China's shortage of milk. He urged them to train an army of intellectuals and technical workers in order to properly accomplish the embryonic implantation of black, white and piebald cows so that the development of dairy cows may be facilitated. He said: We should make full use of oxen, buffalo and yaks. China has 20 million cows which can be improved and the potential of milk production is very great. He hoped that everyone would have the courage to overcome difficulties and regard milk production as an important work.

Zhang Linchi, former vice minister of the former Ministry of State Farms and Land Reclamation, was unanimously elected the chairman of China Dairy Cow Association by more than 500 attendants.

CSO: 4007/70

'JINGJI YANJIU' ON SOLVING PRC FOOD PROBLEM

HK030911 Beijing JINGJI YANJIU in Chinese No 11, 20 Nov 82 pp 73-74, 30

[Article by Zhang Tong [1728 2717]: "The Guiding Thought for Solving China's Food Problem"]

[Text] I. Our Country's Grain Situation

Grain occupies an important position in the national economy and the people's livelihood. Of the food consumption in China, calories from grain constitute more than 85 percent of the total amount of absorbed calories. China's total grain output in 1981 was 650 billion jin, or 8.9 billion jin more than the previous year, ranking first in the world in terms of total output and making up 17.7 percent of the world's total grain output. However, since China's population accounts for 22.3 percent of the world's population, China's average per capita grain output is therefore only 652 jin or one-fifth less than the world's average level (841 jin). Since the founding of the PRC, China has been a grain exporting country. During the period of the First Five-Year Plan, China exported on average 3.8 billion jin of grain a year. It began net import of grain in 1961, and the average annual import of grain during 1961 and 1976 totaled more than 5 billion jin and that in recent years amounted to more than 17 billion jin. China is the home of soybeans and historically, it ranked first in terms of output and export volume. From 1954 on, the soybean output of the United States surpassed that of China and from 1974, the soybean output of Brazil began to exceed that of China. China's soybean output was thus reduced to ranking third in the world and, in addition, China has changed from a soybean exporting country into a soybean importing one. Every year China has to spend U.S. 120 million dollars on importing more than 800 million jin of soybeans.

II. The Guiding Thought for Solving China's Food Problem

To solve China's food problem, we must formulate a practical and feasible principle in view of its present grain situation and in light of national conditions. In my opinion, consideration can be given to the following aspects:

1. We must appropriately import soybeans on the basis of self-reliance. According to UN Cereals and Agricultural Organization estimates, the world's

population will increase from 4.4 billion in 1980 to 6.2 billion by the year 2000, the demand for farm produce increasing by 50 to 60 percent, and the developing countries doubling or redoubling their demand for farm produce. By that time, the world will lack about 100 million jin of grain every year, and there will be 500 million people beset with malnutrition and 1 billion people living in poverty. The population of the developing countries is growing rapidly and their degree of self-sufficiency in grain will decrease from 92 percent to 83 percent. Ours is a big country with a population of 1 billion people. The grain available for export in the world is limited in quantity and the net export of cereals in a year is only around 170 million tons. Once severe natural disasters or grave political disturbances on a worldwide scale occur, the guarantee of the world grain supply is out of the question. At the same time, taking grain as a weapon in political struggle, the superpowers often use it to deal with or control the grain deficient countries. For this reason, we must not rely on the international markets in this respect. In solving China's food problem, we must give top priority to our own efforts. However, socialized mass production is bound to expand from domestic exchange to international exchange. In light of China's national condition, it is necessary and useful to import a certain amount of grain in a certain period. For instance, in 1980 China imported more grain (?and) readjusted its overall crop pattern in a manner suited to local conditions, increasing the output of cotton and sugar. Reckoning from international price fluctuations alone, China earned a profit of more than U.S. 400 million dollars. Moreover, importing less cotton and sugar saved several hundred million dollars of foreign exchange with which we were able to import urgently needed commodities or equipment. Of course, the prices of farm produce on the international market change with the variation of the supply and demand of farm produce. Last year, the international price of edible sugar decreased by a big margin while that of grain was comparatively stable. It was more profitable for our country to import edible sugar than grain. We must make flexible use of the international market, make a timely analysis and also study forecasts of the situation of the world's agricultural production and trade. We must import a certain amount of grain by making the best use of the particular time and situation so as to contribute to China's economic construction.

2. We must practice intensive farming and increase the per-unit yield. The average per capita cultivated land of our country is only 1.5 mu or two-thirds less than the world average level (4.7 mu). China has not enough reclaimable wasteland and has therefore limited potential for expanding the area of its cultivated land. Consequently, grain production depends mainly on intensive farming and on increasing the per-unit yield. At present, China's average per-mu yield of grain is only 377 jin, which makes China 20th in the world. According to UN Cereals and Agricultural Organization analysis, nearly one-half of the increased per-unit yield of crops in the world is the result of the application of fertilizers. Every mu of cultivated land has 78 jin of chemical fertilizers applied to it of which 17 jin is effective. Every mu of cultivated land of many countries in the world has more than 140 jin of fertilizer applied to it of which over 30 jin is effective, producing more than 500 jin of grain. China still has

potential in applying fertilizers to cultivated land to increase the per-unit yield of grain. In addition, the readjustment of the proportion of nitrogen, phosphorus and potassium in chemical fertilizers, the increased use of phosphate and potassium fertilizers and the improvement of methods of fertilizer application will substantially increase the results of the application of chemical fertilizers. At present the prices of chemical fertilizers on the international market have fallen by a big margin. Importing more chemical fertilizers and using them in areas with medium and high grain production will produce tangible results in boosting production. At present, for China to import 1 percent less of grain (150,000 tons of wheat) and switch over to importing ammonium sulphate will mean getting about 310,000 tons more of ammonium sulphate, reckoned according to the price fluctuations in a year alone. Calculated on the basis of 1 jin of ammonium phosphate producing 1 jin more of grain, this practice will increase the wheat output by 580,000 tons and produce a profit of 115.1 million U.S. dollars. In addition to the application of chemical fertilizers, we must attach importance to the utilization of farmyard and green manure. Utilizing crop stalks, human and animal excrement and urine to develop methane can increase an energy resource as well as a manure supply. China must take the road of integrating organic with inorganic agriculture. Coupled with the technical measures, such as variety development by selection, the construction of water conservancy projects, the improvement of cultivation techniques and the enforcement of field management, China still has enormous potential for increasing the per-unit yield of grain.

3. We must suit measures to local conditions and arrange a rational overall crop pattern. Agricultural production must respect objective laws, readjust the overall crop pattern in light of the natural conditions and socioeconomic conditions and in a manner suited to local circumstances and bring the strong points of the various localities into play so as to achieve more economic results. Practice in the past has proved that there were many drawbacks in the custom in which the state laid down hard and rigid rules on the acreage under crops. Since the 3d Plenary Session of the 11th CPC Central Committee, while carrying out some readjustment and reform work in agriculture, we have paid attention to respecting the decisionmaking power of production teams and readjusted the overall crop pattern, thus making the internal departments of agriculture gradually more rational and ensuring an increase in the production of both grain and industrial crops. Compared with 1975, in 1980 there was a fall of 68.84 million mu in the acreage under grain crops throughout the country but an increase of 67.4 billion jin in the total grain output; a decrease of 530,000 mu in the acreage under cotton but an increase of 6.52 million dan in the total cotton output; a decrease of 660,000 mu in the acreage under sugar-bearing crops but an increase of 122.81 million dan in the total output of sugar-bearing crops; a decrease of 950,000 mu in the acreage under flue-cured tobacco but an increase of 320,000 dan in its total output; and a total increase of 36.26 million mu in the acreage under oil-bearing oil crops and sugar beet and an increase of 70 percent and 150 percent respectively in their total output. Compared with 1978, the acreage under grain crops in 1980 throughout the country decreased by 84 million mu while the total grain increased by more than 40 billion jin. This has been the second year to witness high

grain yield and a big increase in the production of industrial crops since the founding of the PRC. At present, the readjustment of the distribution of crop production should be continued. For example, Shanxi and Sichuan Provinces are not suitable for planting cotton and they should give play to the strong point of planting grain crops and switch over cotton to the areas suitable for growing cotton in the northern part of the country. The Huanghe River Valley and the regions south of it have relatively high per-unit yields of grain but low per-unit yields of sugar beet, which have a low rate of sugar content and whose producing areas are scattered. The provinces and localities north of the Great Wall, such as Nei Monggol, Heilongjiang and Jilin with centralized production areas have low per-unit yields of grain crops with the per-mu yield being only 130 to 320 jin but high per-unit yield of sugar beet with a high rate of sugar content and with the per-unit yields being around 1,700 and 2,500 jin. The Huanghe River Valley and the regions south of it should give play to the strong point of planting grain crops and switch over sugar beet to the regions north of the Great Wall so that their respective strong points can be brought into play. While rationally readjusting the overall crop pattern, we must pay attention to stabilizing the acreage under grain crops.

4. We must develop diverse foods and reduce the pressure on grain supply. China's food consumption is unitary and every person consumes 413 jin of grain (processed grain) in a year. The average per capita grain consumption in India and Japan is 280 jin and more. In the United States, Canada and France where livestock products are heavily consumed, every person consumes only 150 to 190 jin of grain in a year. In our country, every person consumes 9 jin of edible oil, 7 jin of edible sugar and 3 jin of dairy products in a year. In India, every person consumes 43 jin of edible oil, 47 jin of edible sugar and 60 jin of dairy products. China's consumption ratio of oil, sugar, livestock products and aquatic products is too low. China has abundant resources which have not yet been put to full use. We must base ourselves on the 1.5 billion mu of cultivated land, have the 9.6 million square kilometers of territory in view, fully and rationally use our rich resources, such as mountain lands, hilly lands, grasslands, water surfaces and beaches, vigorously develop sugar, oil, vegetables, fruits, domestic animals, poultry, aquatic products and so on while grasping grain production and comparatively reduce the direct consumption of food.

5. We must build the bases for producing commodity grain and provide more commodity grain. There are more than 300 counties which can provide more than 100 million jin of commodity grain throughout the nation with every member of the peasant population producing on average more than 1,000 jin of grain or over 250 jin more than the national average level. At present, planting grain crops is not as profitable as planting industrial crops. Although some counties have sold much grain to the state, thus making great contributions, they are poor counties with high grain yield. The state must emphatically help sustain the base for producing commodity grain in such ways as reducing the base of the grain purchased by the state, giving priority to the supply of the means of production, giving appropriate preferential treatment to them in such aspects as investment, credit and tax revenue, and accelerate the construction of the bases for producing

commodity grain so that they can provide the state with more commodity grain.

6. We must bring our population under control and economize on food consumption. China has a huge population which is growing rapidly. A considerable part of the increased grain is consumed by the newly grown population. Excessive population growth will not only be detrimental to improving the living standards of the people but also prevent us carrying out our economic construction in a fairly satisfactory way. The natural rate of increase of China's population in the countryside is higher than that in the cities (12.1 percent in the countryside and 8.8 percent in cities), furthermore, more than 80 percent of the population lives in the countryside. The countryside must be the focal point of our family planning work. Provided we try hard to control population growth, we can reduce the demand for grain.

CSO: 4007/70

COMMERCE MINISTRY HOLDS PRODUCTION SUPPLY MEETING

OW221203 Beijing XINHUA Domestic Service in Chinese 0725 GMT 26 Dec 82

[Text] Beijing, 16 Dec (XINHUA)--It was stressed at the recent national conference on the supply of the means of agricultural production that, to adapt to the new situation in the development of the commodity economy, as well as the continual development of the various systems of responsibility in agricultural production in the rural areas, the supply of the means of agricultural production must be further improved in 1983, and that proper logistic services must be provided to agricultural production, which is a task of strategic importance.

Those comrades engaged in supply of the means of agricultural production in different localities unanimously maintained at the meeting that, because of the improvement and development of the systems of responsibilities in agricultural production, the appearance of large numbers of specialized and selected households in the rural areas and the rapid development of commodity production, the departments in charge of supply of the means of agricultural production are now required to make sure that: 1) there is a supply of the means of agricultural production; 2) these means of production are available at an early date; 3) these means of production are conveniently purchased; and 4) these means of agricultural production can be operated and used by the peasants. The meeting also noted that, because of these demands, the departments in charge of supply of the means of agricultural production must improve the supply services by readjusting their supply policy, improving their method of supply, strengthening their technical service and increasing the economic effects of the means of agricultural production. To this end, the meeting maintained that the following tasks must be properly done:

--To promote and guide production and to broaden the source of supply. It is estimated that the supply and variety of the means of agricultural production in 1983 will increase in varying degrees during 1982, but that the demand for chemical fertilizer will still exceed the supply. For this reason, the departments in charge of supply of the means of agricultural production must intensify investigation and study, step up market forecasts and provide timely market information to the industrial sector so that what is needed can be promptly produced. To meet the domestic needs of chemical fertilizer—the demand for which far exceeds supply—all possible means must

be used to promote production, particularly chemical fertilizer of fine quality and phosphorus and potassium fertilizer. The small chemical fertilizer plants in a province, as well as those in different provinces, should do a still better job in adjusting their surpluses or shortages. To cope with the longstanding shortage of medium and small farm implements made of wood or bamboo, Sichuan's experience of substituting iron and plastics for wood should be popularized, so that output can be increased. To satisfy the masses' urgent need for draft animals, the market in draft animals must be enlivened, and adjustment made among those who have surplus and those who are in need.

—To improve the method of supply by actively broadening the channels of supply. Regarding supply of the means of agricultural production, the principle of supplementing planning with market regulation must be implemented. Principal means of agricultural production, like fertilizer and agricultural chemicals, which concern the national economy and the people's livelihood, must be strictly planned, and their allocation [gui kou 2981 0656] will be operated and administered by the Ministry of Commerce. The supply of the means of agricultural production under the third category must be enlivened by bringing the market's regulatory role into full play. As the means of agricultural production are needed by numerous households, the supply must be expanded by taking advantage of the many grassroot supply and marketing cooperatives in the rural areas. The number of retailers of the means of agricultural production must also be appropriately increased, as must the number of temporary workers and temporary supply centers, in order to meet the needs during the busy farming season. Flexible measures for improving supply, such as transregional and door-to-door delivery, establishing a delivery service in the rural areas, making purchases by appointment, making regular deliveries to specific locations and so forth, must be adopted.

--The service of providing scientific and technical guidance must be strengthened. Departments in charge of supply of the means of agricultural production should work, in coordination with the crop protection departments, to guide the peasants to use chemical fertilizer and agricultural chemicals scientifically, safely and rationally. The use of plastic film should be encouraged. Experimentation and propagation of new products should be carried out in coordination with the agricultural departments. Many localities have now set up technical service centers at the grassroot supply and marketing cooperatives, or at the retail departments of the county-run companies, and they have achieved fine results in propagating knowledge about how to use the various kinds of commodities. This practice should be propagated flexibly.

The meeting, which lasted from 6 through 15 December, also studied the administrative reform of the wholesale organs of the departments in charge of supply of the means of agricultural production, the strengthening of the contingent of staff and workers through intensifying political and ideological work, and improvement of operational and economic efficiency. The meeting also exchanged and reviewed the experience of improving the supply of the means of agricultural production since the 11th Plenary Session of the 11th CPC Central Committee.

OVERWINTERING CROPS EXPERIENCE GOOD GROWTH SEASON

OWD80541 Beijing XINHUA Domestic Service in Chinese 0745 GMT 7 Jan 83

[Text] Beijing, 7 Jan (XINHUA)—This year overwintering crops are growing relatively well in most of the country's localities. At present, the various localities are tightly grasping winter season field management and the accumulation of fertilizers and are making good preparations for combating drought and removing waterlogging in the spring season, in addition to various other production activities.

Last year's autumn and winter sowings were carried out under the situation in which the guidelines of the 12th National CPC Congress were being implemented and the combined production and contract responsibility systems were being further improved; therefore, the sowing speed was fast, quality was good and the crop arrangements were also more reasonable. The acreage of winter wheat exceeded 420 million mu, an increase of more than 10 million mu over 1981; the acreage of winter rape was reduced by 9.5 million mu compared with 1981 as a result of rational readjustments; and the acreage of green manure exceeded 85 million mu, equalling the acreage in 1981.

At present, the seedlings of overwintering crops in most localities are growing better than in the corresponding period for last year. Over 80 percent of the wheat in Beijing municipality belongs to the first and second categories, an increase of nearly 20 percent over 1978—the best year in the past. In Shandong Province, 85 percent of the wheat was of the first and second categories, an increase of 25 percent over the corresponding period for last year. The existing problems are: In the previous period, high temperatures and scarce rainfall prevailed in the northern area giving rise to signs of drought in a few places susceptible to drought; and in the southern area, there is relatively more rainfall which soaks and removes the wheat and rape fertilizers in a few localities.

To deal with the above problems, the various localities are taking positive measures to strengthen field management for the overwintering crops in an effort to win a bumper harvest for this year's summer season.

CSO: 4007/70

'GUANGMING RIBAO' ON HOUSEHOLD CONTRACTING WORK

HK110802 Beijing GUANGMING RIBAO in Chinese 28 Nov 82 p 4

[Article by Fang Gongwen [2455 1872 3306]: "Contracting Work to the Households Is Cooperative Economy Under the System of Collective Ownership—Thoughts Based on Study in Chuxian County, Anhui Province"—passages within slantlines published in boldface]

[Text] As soon as the system of production responsibility involving contracting work to the households appeared in villages throughout China, it received a great deal of attention from every quarter. There were some who welcomed it warmly and showed keen support, others who had misgivings and those who were against it and stood in the way. However, whatever people may think, the system has actively blazed a new path for itself, making use of its own superiority, relentlessly developing in accordance with the inevitable rules of historical development. Within a short period of 4 years the system has already established itself as the most important type of responsibility system in China's village communities. According to statistics for the first half of this year from relevant departments, 67 percent of all production brigades in villages throughout China (except Xizang) are now production brigades involved in contracting work to the households. This trend is still developing.

Not long ago we traveled to Chuxian Prefecture in Anhui Province to carry out some investigations into the system there. In January 1979 Chuxian Prefecture initiated the system of contracting work to the households in five production brigades. Today 99.93 percent of all of the prefecture's production brigades have adopted the system of contracting work to the households [CWTH]. Since the initiation of the system, agricultural production has shot up. In the 2 years from 1979 to 1981, total grain output rose by 42.7 percent, while total cotton production rose by 86.8 percent and total production of oils rose by 192.2 percent. In 1981 the average income for commune members stood at 280 yuan (including income for household sideline production); this was an increase of 113.7 percent over 1979. Although this year some prefectures suffered various natural disasters such as flooding, total grain output still increased by 6 percent over last year while total oil production rose by over 15 percent. This year it is estimated that the average income for commune members may reach 330 yuan, showing an increase of around 17 percent over last year.

There have been numerous arguments over whether the system of CWTB will promote production development or whether it will destroy the productive forces. Production increases over the last few years have already provided an answer to this question. Now the task is to ensure that everybody understands and appreciates the nature and quality of the system in the same way. In the villages there are some people who express misgivings and fear about changes. Some cadres feel that the CWTB system is still only a temporary measure and that eventually we will return to previous systems. In the academic world there is still controversy over whether the system of CWTB represents an individual economy or whether it is a cooperative economy under the system of collective ownership. /Most differences of opinion concerning the nature of the system of CWTB are concentrated in the following few questions: Can the system of collective ownership bring about by changes in such things as the handing out of such production tools to peasants as manual tractors and farm cattle? If concentrated labor is changed to decentralized labor to give the peasants a certain amount of decentralized and independent management power, will the cooperative economy collapse? Is distribution of contracting work to the households distribution according to work?/ Without finding satisfactory answers to these few questions it is impossible to establish a unified appreciation of the system of CWTB. /The peasants fear change and some cadres want change. The root of this lies in whether or not there are still doubts and misgivings as to whether or not the system of CWTB is a cooperative economy under the system of collective ownership./ Thus this article will consider these few questions and assimilate what was learned from our investigations in Chuxian Prefecture and analyze the results.

Concerning the System of Ownership

After the initiation of the system of CWTB, means of production which were originally collectively owned were split up and some remained collectively owned, while another portion became privately owned by commune members through a system of deposits or price evaluation. Did this change in the ownership of the means of production change the nature of the system of collective ownership? An answer to this question demands that we fully analyze the make-up of the means of production within collective ownership and those belonging to individual commune members and where they rank within production.

Land was the most important thing to remain in collective ownership. "The minutes of the National Peasant Work Committee meeting" said "the system of public ownership of such fundamental means of production as land will remain for a long period of time." Land is the most fundamental requirement for agricultural production and without land there can be no agricultural production. Thus when we consider the nature of the system of ownership of the means of production in agriculture, the most important thing to consider is to whom the land belongs. As far as Chuxian Prefecture is concerned, those means of production which remained in collective ownership apart from the land included irrigation installations and equipment, electrical installations equipment for plant protection, etc. In Chuxian Prefecture the production of rice represents 60 percent of total grain production and thus

Irrigation is of utmost importance. Electricity is vital for the organization of irrigation and thus irrigation represents agriculture's lifeblood. This lifeblood is thus collectively owned.

With land under collective ownership it does not follow that it is always definitely a cooperative economy under collective ownership. After the October Revolution in Russia it was announced that the land belonged to the state but at the time the peasants were still individual peasants. Land reform methods in China are also in line with the system of city and suburban land state ownership but before the system of cooperatives came into being, peasants in the suburbs were also individual peasants. Because in the above two situations ownership and the right to use the land were separately organized with ownership belonging to the state and the right of use to the peasants, the peasants in reality administered the land as if it was their own private property. Under the system of CWTB, although there is still a difference in where ownership and the right to use the land belongs, commune members contracted to work the land have conditional rights of use of the land, in other words, their rights are not total or unconditional. If a commune worker wants to be contracted to work the land, he or she must take on the responsibility in the collective. These responsibilities and duties generally include that they may not transfer, rent, discard or destroy the land; they must manage the land in accordance with the jointly decided plans of the collective and they must complete their production tasks; sale of produce must be organized through the planning of the collective and must fulfill the collective's organized monopoly for purchasing and marketing; distribution of produce must also be in accordance with the collective's plans and should be in accordance with the targets for production contracts; they must be responsible for paying agricultural taxes. With the collective coming to terms with the ownership of the land and ensuring that commune members carry out their duties in terms of production, circulation and distribution, it is possible to ensure that land administration is carried out correctly in line with socialist principles.

Means of production belonging to individual commune members include such tools as plows and hoes, etc., as well as farm animals and some medium and small-scale farm machinery, such as hand tractors, etc. These things represent important means of labor within agricultural production and the state of these means of labor reflect the level of development of agriculture. However, agricultural production is not decisively conditioned by them. The decisive factor is always the land. Without land it would be impossible for workers to join together with the means of production to perform agricultural production; likewise, with the existence of land but a lack of plow animals and farm machinery, laborers can still till the land using more basic methods, although of course efficiency and production would fall considerably. Thus with the collective grasping these fundamental conditions for production such as land, etc., and with the correct application of suitable policies and measures the commune members are still members of a cooperative despite the fact that they privately own these means of production, such as farm tools, etc., and thus they are not individual peasants. Of course the return of these means of production to private ownership among the peasants does represent a readjustment to

production relations. One of the traits of the system of CWTB is decentralized administration under a system of unified administration by the collective. The private ownership of these means of production by the individual peasants is the concrete basis for them to carry out decentralized administration and it guarantees a certain mobility and independence in production and administration. At the same time, historical experience shows us that the distribution of these tools such as farm animals and tractors to individual homes means that they are better taken care of, better maintained or nourished and better used.

Concerning Decentralized Labor

For a long period of time a way of thinking has been evolving in which the system of collective ownership under a cooperative economy means that collective labor must be involved and that this is the only possibility. The system of CWTB alters most labor from being collective to being decentralized and thus some people doubt whether the system of CWTB is actually a cooperative economy under the system of collective ownership. In actual fact collective labor in agriculture in the past meant communal labor with hand tools under conditions in which distribution of labor was not very well developed, thus it was a kind of simple cooperation system. This type of collective labor was not characteristic of socialist labor.

Marx once said that cooperation or collaboration "created a kind of productive force." In agriculture there still exists some seasonal activities, such as harvesting and planting or fighting natural disasters, which cannot be carried out by a few people but which require a large group of workers laboring together. Thus, for example, working on land irrigation or repairing agricultural machinery when carried out under simple collaboration or cooperation can give expression to an enormous power. But if no distinction is made between various situations and every type of work is carried out with simple collaboration labor efficiency will be bound to fall. Chinese villages carried out collective labor for a long period of time and labor efficiency was very low. Our investigations into Chuxian Prefecture show us that most commune members felt that in the past they had to work every day, all day long and were constantly busy while now they are busy with agricultural work for, at the most, 3 months out of every year, whereas the land condition is far better than before. Thus decentralized labor has produced a great deal of surplus work power, thus making a mockery of the former centralized system of labor. Thus we can see that the former system of centralized labor was not by any means an advanced system.

The characteristics of an individual economy is decentralized labor but decentralized labor is not necessarily individual economy. The model trait of the socialist style of labor is distributive labor collaboration on the basis of socialized production, but socialist labor is not labor by distributive labor collaboration in every situation and at every time. Thus we cannot take decentralized labor as the standard for distinguishing between an individual economy and a cooperative economy under the system of collective ownership. In actual fact there is still a great deal of

decentralized labor existing within socialist labor. This is primarily a result of imbalances in the development of the productive forces. In socialist countries and in particular in socialist countries which previously had very backward economies it is impossible to immediately carry out mechanization and socialization of production in every sphere. In some areas and some enterprises handicraft labor and production remains the mainstay for a very long period of time and thus this ensures the preservation of decentralized labor. Furthermore, because of their special characteristics, some production activities make themselves only suited to decentralized labor. China's agriculture is conditioned by the above two factors mentioned above. At present manual labor is still the mainstay of agriculture with human and animal power representing the main force and mechanization at a relatively low level. Agricultural production has more very special features, namely its targets represent life-giving crops and thus the entire growing cycle and process should be examined so that accurate administrative measures may be used for different stages and different conditions in the whole process of growing crops. These measures thus ensure continuity. Conditions affecting crops are different from those affecting industry, for example, they include the weather, the soil, water, fertilizers, insect damage and damage caused by disease. Such conditions are not constant and their changes are extremely complex, requiring constant care and attention and consequent adaptations and changes in according to conditions. Furthermore, China has a tradition of intensive and meticulous farming and thus all these characteristics demand that Chinese agriculture use decentralized labor as its main method of farming.

After the initiation of the system of CWT in agriculture, decentralized labor became very important. But it does not by any means totally wipe out collaboration labor. Judging from Chuxian Prefecture, two kinds of collaboration exist. One kind is the transplantation of rice seedlings, harvesting and avoiding disasters as well as repairs and organization of irrigation. Sometimes it is collectively organized and sometimes it is put into action by individual commune members. The other kind of collaboration labor is technically related labor. Since the introduction of CWT the peasants have become much more keen to study the sciences with the result that the scientific working of the land has reached a very high level and has thus given rise to some new types of work such as cultivation control and plant protection using scientific methods and the study and propagation of new scientific methods such as these have created new divisions of labor. For example, in Chuxian Prefecture they have spread the use of hybrid rice and each production brigade has several members who collectively control cultivation, and under the guidance of the commune's scientific personnel, seedlings are distributed to all commune members. Xiandong commune in Xianchu Prefecture has set up a plant protection office subsidiary to the main plant protection office in the prefecture, and in this subsidiary office four teams are responsible for plant protection, using automatic sprayers to spray chemicals, producing very good results and high efficiency and with economic use of chemicals and low production costs the system has been warmly welcomed by the commune members. Many communes have taken on such responsibilities as wheat and rice growing, cultivation control, growing of tobacco and rape, tea production, pig raising and egg production.

Those in charge are the commune's scientific personnel and cadres who provide technological guidance to the commune members. If production output does not reach contracted levels then it is these in charge who must pay compensation while any profits from exceeding planned levels is distributed according to specific ratios. This kind of distributive labor collaboration has evolved on the basis of well-developed production and advanced technology. In contrast to former types of simple collaboration it is a much more sophisticated type, with very good prospects for future development.

Concerning Decentralized Management

With the system of CWTB the commune members are able to buy the means of production themselves and organize their own crop rotation as well as choose for themselves what technological measures they should make use of and carry out their own investments, their own distribution of income and thus be responsible for their own profits and losses. This decentralized management is in keeping with agriculture's characteristic of decentralized labor being the most important type of labor. Agricultural production demands that producers make decisions and take action on the basis of changing conditions and this thus demands that ownership, management and direct producers should all be joined together. But this kind of decentralized management is not individual management, but is a certain degree of decentralized management internal to the cooperative economy under the system of collective ownership which takes the system of collective ownership as its premise. The system of CWTB in Chuxian Prefecture in general demands the unification of several things such as production planning, water usage management, the organization of the state monopoly on purchase and marketing as well as the unification of collective enthusiasm, etc. In addition, the implementation and spreading of such things as plant protection, seed production, irrigation and electrical equipment and enterprises run by the commune are all organized and administered by the collective. The collective is an administrative or managerial unit and at the same time is also a central and nuclear unit. Before the new system of CWTB, labor and output on the land had to be estimated in the production brigade along with production brigade management costs and costs for official, cultural and educational undertakings. Such expenditures as well as the collective investment required for enlarged reproduction had to be totaled and the remaining portion of profits and output then worked out before any contractual agreements could be signed. Thus decentralized management by commune members in terms of planning, produce marketing, distribution and the organization of agricultural and technological measures must be in line with state plans and the unified administration and management of the collective. This is thus an economic system in which unified management by the collective has been integrated with the decentralized management of the commune members and is a creation of China's peasant production. It is in keeping with the characteristics of agricultural production as well as the characteristics of decentralized labor in agriculture and it has solved many longstanding problems, being able to suitably coordinate collective and individual interests, allowing both unified management by the collective and individual and personal management freedom of expression, thereby catalyzing the development of agricultural production.

The direct linking up of unified management by the collective with decentralized management by individual commune members is the contract agreement. The agreement sets out contracts for the land with responsibility being taken by party A (production brigade) and party B (individual commune member). The agreement is conditioned by the unified planning of the collective as well as state planning and is worked out on the basis of the correct handling of the relations between the state, the collective and the individual, and the supply and marketing activities for agricultural products is placed in the peasant home. Not only does this method directly link together the unified planning of the collective with the decentralized planning of the individual, it also provides a guarantee for the continuation of the principle of making planned management central and market adjustments secondary within agriculture. In the past, agricultural planning was performed as a result of administrative orders coming down the line and thus production was often blindly organized and directed. The system of contractual agreements means that economic means are used to carry out planning, and if the plans do not reflect reality the contractor may refuse to accept the contractual agreement. The person undertaking the contract can thus know by means of the contract what his or her responsibilities toward the state and the collective are as well as knowing what income will be received by completing the contract during that year.

Concerning Distribution of Contractual Work

During our investigations the cadres of the prefecture all felt that distribution of contractual work was distribution according to labor. They said that in the past eating from the great iron rice bowl had led to egalitarianism, which was not in accordance with distribution according to labor. Today "the state has ensured part, the collective gets its share and the remainder goes to the individual." This truly embodies the principle of "the more one works the more one gets." However, there is one school of thought which says that distribution of contractual work is not distribution according to labor and that with peasants carrying out their own management and having direct possession of their labor produce the system is not unlike that of an individual economy. How should this question be handled?

"The state is ensured its part, the collective gets its share and the remainder goes to the individual" illustrates that this method adheres to the socialist principle of distribution which takes into consideration the interests of the state, the collective and the individual. The above sentences make it clear that in addition to reductions from subsidies in production and means of production consumption, commune members produce must still go through a series of deductions such as that for accumulation funds, management costs and funds for the collective's welfare before they may be distributed individually. This is in keeping with any kind of system of distribution according to labor. The most controversial and the most important is the last of these sentences and if we have a good look at this last sentence it will become clear that it is not so easy to understand its nature. However the system of CWT is a result of development from the system of contracting production to the household and the

latter has in turn indirectly developed from the system of labor contracting. If we study the distribution of contractual work from the basis of the development of the styles of distribution in the cooperative economy under the system of collective ownership in China's agriculture we can see its similarities and differences in comparison to former styles of distribution and thus we can with relative ease establish its nature. Several of the most important styles of distribution since the introduction of cooperative system are reviewed below:

Evaluation of work and work point allotment. This method was adopted and used for a long period of time everywhere in China. This method directly made use of the period of time spent on working out the amount of work done by the commune member for the collective. Distribution was then carried out on the basis of each individual's contribution. It is possible to see the relation between this and the principle of distribution according to work, in a very direct way, but this method of distribution resulted in everyone eating from the big iron rice bowl, i.e., egalitarianism.

The quota points system. This system was based on working out the quantity of work done by a commune member for the collective in terms of completion of different amounts of work projects and then carrying out distribution on this basis. Such a method of working out work quantities was very indirect but its links with distribution according to work were very obvious. Because of the complexity of the system it was difficult to continue and spread.

Work and production contracting. This included contracting production to a group, to a household, etc. In most cases it involved the reward system. This system used the product quantities to assess the amount of work done by the commune member for the collective, with distribution carried out on this basis. Since agricultural production had to go through a cycle of production before any quantities could be known and since the quantity of produce was affected not only by the amount of work put into it but also such external factors as the weather, etc., such a method was extremely difficult and only approximate estimates were obtained. Nevertheless, distribution according to work could still be seen very clearly within its framework.

CWTH. This system has developed from the system of contracting production to the household with rewards or penalties. Under the system of contracting production to the household with rewards and penalties the peasants handed over the produce they made in accordance with their production contracts to the production brigade and after the production brigade had made various deductions distribution was carried out on the basis of work points into which the contractual production had been converted. In actual fact the commune members did not hand over all the results of their production to the production brigade, and by working out the proportion that the production brigade would give back to them and making up for the deficiencies in the production brigade's books they eventually handed over only that portion which was supposed to be received by the production brigade. However, the production brigade's accounting system and various formalities were complex

and after some simplification the system became the system of CWTB. At the same time as establishing the norms for production contracting, the various proportions for the remainder, etc., were also worked out and thus after the commune members have handed over the remainder, no further complex calculations are necessary and the remainder will be for the individual.

The above process of development shows us that the system of evaluation of work and work point allocation corresponds most closely to the principle of distribution according to work, but it does not correspond or suit China's agricultural production traits or the situation in China's villages. Thus in handling socialist relations it is not possible to start on an abstract basis, but instead the principles of Marxism should be applied to concrete practice so that a suitable method may be found to suit in actuality. After much practice among the masses, agriculture has eventually come up with a distribution system for contractual work which suits most regions and situations in China and which complies with the demands of the masses. However we can see that the nature of the principle of distribution according to work is gradually being concealed. In actual fact these changes in the style of distribution have not changed the nature of distribution according to work. The system of CWTB has evolved from the system of contracting production to the household with rewards and penalties, and both of them make the collective decide the tasks, while the production contract defines the amount of work that should be spent by the commune member on completing the task and the collective then removes a portion on the basis of the amount of work each individual should expend on completing the work, and after this, produce is distributed according to the amount of work completed by the commune member. Since the system of contracting production to the household with rewards and penalties is a type of distribution according to work, there is no reason to say that the system of CWTB is not distribution according to work either. The only difference is that in the latter the formalities are much more simple. Because of its simplicity it does ostensibly appear that the individual worker possesses his or her own produce. Furthermore, the amount of produce is affected by the weather and investments in addition to the amount of work put into it by the worker and under the system of CWTB, because the commune members partake of the profits gained from the investments; it is not part of the nature of distribution according to work. Nevertheless, judging from the situation in Chuxian Prefecture, where supplementary financial work has been started for those without production funds, differences between investments and between resultant incomes are not obvious. As a result of these kinds of factors we feel that the system of CWTB should be referred to as an adapted type of distribution according to labor, which seems a more fitting name for it.

Within distribution relations it is often possible that situations arise in which the style and the nature are not similar. In capitalist societies, workers sell their work force on the basis of its price and value and the income he or she receives is the price of the labor. But after the price of the labor has been converted into wages, and this is particularly true in piecework, the wages that the worker receives appear to be remuneration for all of his or her work, thus concealing the true nature of the wages and the exploitative relations of the capitalist to the worker. On the

other hand, in a socialist country with enterprises owned by the people and to the large part collectively owned and run enterprises, the system of distribution according to work is carried out, and although the styles employed seem almost identical to those in capitalist wage systems, the nature of the two are in fact completely different. Thus under the system of CWTB, while the nature and the style of distribution are not in harmony, this should not be considered unusual or surprising.

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In his report to the 12th CPC National Congress, Comrade Hu Yaobang said: "In the countryside, the cooperative economy under the system of collective ownership by the laboring masses is an important economic style." In light of our analysis of the system of CWTB, regardless of whether we talk in terms of the ownership of the means of production or the style of work, administration, management or distribution, the system ought still to be included in the cooperative economy under the system of collective ownership and is not an individual economy or any other kind of economy. In fact, in more exact terms it is a cooperative economy under the integration of unified management by the collective and the decentralized management of the individual commune members. This kind of cooperative economy is not entirely in keeping with the view we have had for a long time concerning the development of the system of cooperation, but it does not in any way contravene any of the theories of Marxist agricultural cooperation. The heart of Marxist theory of agricultural cooperation is that after taking political control the proletariat cannot exploit the peasants and farmers but can only use demonstrative methods, and on the basis of the principles of voluntary participation and mutual benefit, use styles of cooperation to encourage the peasants to take to the socialist road. As to the concrete development and style of the process of cooperation, there are a multitude of different styles all based on different concrete situations. However, in the past we believed the only possible styles were the soviet collective farms and China's own people's communes and advanced agricultural producers' cooperatives. Any other styles which were different from these were considered bourgeois. During the 20 years after the basic completion of the system of cooperation in China, there were no deviations from these several possibilities and thus no suitable style was found which truly fitted the situation in China's villages, thus the advent of the cooperative economy under the system of collective ownership was warmly welcomed by the masses as a good, new style. After the 3d Plenary Session of the 11th CPC National Congress these past "leftist" errors were corrected and under the guidance of the party's correct thinking the peasant masses established many kinds of production responsibility systems, including the system of CWTB, thereby establishing a new phase for the development of the cooperative economy under the system of collective ownership in China's villages. This represents the development of Marx' theories of agricultural cooperation by actual practical application in China.

This kind of responsibility system known as CWTB is not only in accordance with the present level of development of China's productive forces in agriculture, but is also in accordance and suited to the characteristics of

agricultural production. Not only is it suitable for today's agriculture, which concentrates . . . manual work, but it is also suitable for the future development and modernization of agriculture. Since its birth 4 years ago the system of CWTH is still considered a young child with a great life force and its innate superiority is only now beginning to show. Now we should devote a long period of time to stabilizing this system of production responsibility. It is wrong to think that the system of CWTH is a measure of expediency and that we will revert to former methods soon. It is also wrong to think that the system of CWTH will pass and be taken over by other systems. On the basis of production development, specialized distribution of work may arise as well as specialized personnel and composite economic body. Such things should be given support and help. But such things are all based on the system of CWTH and to place the system of CWTH as the most basic or primary level or style of all these things is also wrong. Our present task should be to stabilize the system of CWTH and not change it for a long time, and instead allow it to gradually develop and improve.

CSO: 4007/70

'NANFANG RIBAO' ON RURAL PRODUCTION, MARKETS

HK100101 Guangzhou NANFANG RIBAO in Chinese 3 Jan 83 page not given

[Article by Liang Zhao [4731 6856]: "On Rural Market Issues"]

[Text] An encouraging change of situation has taken place in rural areas and commodity production has also developed rapidly because of the implementation of the correct economic policies and, in particular, the system of contract responsibility with payment linked to output, since the 3d Plenary Session of the 11th CPC Central Committee. The extensive rural market has caught the eye of more and more people.

What is the present situation and characteristic of production and markets in rural areas?

Important achievements have been made by redressing "leftist" errors, relaxing economic restrictions in rural areas and helping a proportion of peasants get rich before others. In the past few years, agricultural production has grown rapidly in the province. In particular, it is encouraging that households doing specialized jobs and specialized households have sprung up like mushrooms. In Foshan Prefecture alone, the number of households doing specialized jobs and specialized households in field cultivation and animal raising is over 40,000, which make up 3.5 percent of the total number of households in the prefectural area. These households are known by their high labor productivity and high commodity rate. Therefore they have made important contributions to the state and the collective. An increasing number of rural households selling around 10,000 jin of commodity grain, about 1,000 jin of edible oil, nearly 100 pigs and several thousand domestic birds to the state a year or rural households engaging in diversified economy who earn nearly 10,000 yuan a year, can be seen not only in the fertile plains but also in the outlying districts. The quantity of grain and meat sold to the state by some households doing specialized jobs or specialized households is about the total quantity of grain and meat supplied by an entire production team. The market situation is taking a favorable turn. The province has changed from being short of agricultural and sideline products and the prices of some products have been reduced in the wake of agricultural growth.

A new diversified cooperative economy and new economic combinations have surged up in the rural areas because of the implementation of division of labor, assigning work to different trades and services and the system of contracting specialized jobs. These new economic organizations are different from the enterprises run by the communes and brigades under collective ownership. This economic entity is formed by volunteer commune members in order to meet the needs of the system of contracting specialized jobs and the growth of commodity production. For instance, it is necessary to jointly run a hatchery and a mixed feed processing plant in order to meet the growth of poultry raising farms. Some peasants are organized to run agricultural and sideline products processing plants, supply and marketing enterprises and forwarding agencies. Some commune members run food and drink trades. Most of them have raised their own funds. They buy raw materials themselves. They sell their products to the customers and they assume sole responsibility for profit or loss. At the same time, they establish business relations through various means with state-run enterprises, supply and marketing cooperatives and brigade-run enterprises.

They develop diversified economy and commodity production in line with local conditions and raw materials. Some localities have put an end to their backwardness. Previously, they consumed grain supplied by the state but now they supply a lot of agricultural and sideline products and native products for the state and market, after policies have been relaxed.

A radical change has taken place in the peasants' livelihood and consumer goods in rural markets. Today, there are five manys in rural areas: peasants have a lot of money deposited in the bank, have deposited a lot of grain, have built many new houses and have bought many consumer goods and agricultural machines. Supply and marketing is booming in rural areas, which has not been seen for years. A "buyer's market" has appeared for some industrial products in rural areas. Formerly, people used to rush to purchase goods, and now this situation has changed. Now they are keeping their money and buying selectively. They will not take a fancy to products unless they are famous brand products.

That "heavy industry should take agriculture as its principal market" has become more and more important. Some people are worried that the implementation of production responsibility in various forms in rural areas will affect the process of mechanization in agriculture. However, the result is contrary to expectation. Peasants more than ever need scientific technology, new machinery and equipment. At present, there are various commodities in short supply for rural consumption such as hand-held tractors, light automobiles for agricultural production purposes, machines for processing sideline products, equipment for small hydroelectric stations, fertilizer, pesticides, cement, steel products, timber, glass and other building materials as well as coal, coke, gasoline, diesel oil and kerosene for energy use.

These new situations have caused some problems: Commodity exchange is inconvenient, circulation channels are blocked and commercial and transport services cannot entirely meet market demand. How can we deal with these new problems?

First of all, we should raise the level of our understanding and acquire some fundamental tenets of political economy. Purchase and sale are not the only problems in the rural market. The market problem can be interpreted as social reproduction, or how social products are materialized in terms of value and material form. This includes vertical and horizontal aspects: the vertical aspect includes productive force and production relations and foundation and superstructure. Here we should pay particular attention to production relations. The horizontal aspect is comprised of four links, production, consumption, distribution and exchange. We should grasp these four links in an all-round way. In the preface of "A Critique of Political Economy," Karl Marx pointed out: "Production is directed at consumption and consumption is directed at production. Each side is directed at its counterparts.... However, consumption is impossible if production does not exist. If it is so, production is aimless." ("Selected Works of Marx and Engels," Vol II, pp 93-94) In our socialist country, production is closely linked with consumption. As there is no block set up by the system of exploitation, the aim of production is to meet people's needs. However, usually, production is divorced from consumption because it is not conducted in a planned way. The products are of poor quality, unmarketable, overstocked and cause waste and losses because of improper management.

Production, consumption, distribution and exchange are the four links that make up an organic whole, and are inseparable from social life. Marx said: Production, distribution, exchange and consumption all "form an entity of various links and differences in a unified body" and "a certain form of production decides a certain form of consumption, distribution and exchange and a certain form of relations between these factors." ("Selected Works of Marx and Engels," Vol II, p 102) This means that in the process of a certain form of production, these vital factors are mutually conditioning, influencing each other and reinforcing each other. However, for a long time, we have been violating these principles in our economic work and we failed to regard these four links as an organic whole. In particular, we ignored the issues in circulation, distribution and consumption. For instance, we failed to vigorously develop socialist commodity production and exchange. We only ran "big and comprehensive industry" and "small and comprehensive industry" in order to be self-supporting. This seriously fettered the productive force and impaired the development of division of labor, assignment of work to different trades and services, and organization of specialized and socialized jobs. For another instance, circulation channels were blocked, and the circulation turnover was inflexible. The construction period was too long, and the distribution could not arouse the laborer's initiative. This reduced economic results. Since the Third Plenary Session of the CPC Central Committee, we have smashed the bonds of "leftist" ideology and corrected the guiding ideology in economic construction. We have relaxed economic policies in line with national conditions. We do our work in light of socialist objective laws. We adhere to grasping the four links of production, consumption, distribution and exchange simultaneously. Thus we have embarked on a right course and created a new situation in socialist economic construction.

Again, we should vigorously and steadily accelerate transformation in the economic system. In particular, we should do a good job in transformation of the commercial circulation system and liven up the circulation in the economic field. At present, it is more important to break down "leftist" ideological conventions, to carry out the reform of the grassroots supply and marketing cooperative in rural areas, the wholesale and retail dealers' enterprises, to implement the management-administration responsibility system and the system of contracted responsibilities with payment linked to output and to overcome bureaucratic work style and improve service.

Finally, we should boldly encourage the peasants to develop commerce, transport and service trades. For many years, commerce was purely a state-run enterprise under the bonds of "leftist" ideological convention. Peasants who engaged in commercial activities were criticized as capitalist for abandoning agriculture for trade. Due to this, the commercial networks have been scattered in rural areas and it is very inconvenient to the peasants to sell their agricultural and sideline products and to purchase industrial products. Therefore, circulation has failed to promote production and hampered production. This is divorced from reality and is not in line with national conditions. The quantity of agricultural and sideline products to be sold by peasants will constantly increase and their need for industrial products will grow rapidly in the wake of economic development in rural areas. It is extremely urgent to reform the commercial system and to establish commercial networks with diversified forms in rural areas. The reform of the commercial system in rural areas should stress the transformation of the grassroots supply and marketing cooperatives. These cooperatives should be turned into a real cooperative economy of collective ownership. The reform should proceed by distributing dividends and issuing more shares to peasants so that it will have a popular, democratic and flexible character.

In order to meet the need of economic development following the implementation of the contract responsibility system with payment linked to output in rural areas, we should boldly encourage the peasants to develop individual and collective-run trades, transportation and service trades. They not only can engage themselves in part-time trade, but also should establish specialized businesses in accordance with state law. They can be a pedlar and/or open a shop as well as work as forwarding agents and in the food and drink trade. We should fully arouse the initiative of every one of them, make the best possible use of men and material and circulate goods under the state in a planned way in order to bring about a better situation in rural areas.

CSO: 4007/70

BRIEFS

DRAFT CATTLE MARKET REGULATIONS--Guangdong Province has formulated new regulations on the draft cattle market. The new regulations expressly provide that it is necessary to relax policies to break down regional blockade and further enliven the draft cattle market. The new regulations point out that to carry out regional blockading is to protect backwardness and that to blockade each other results in hindering the normal circulation of commodities, affecting everything being made use of and putting the development of the commodity economy at a disadvantage. The new regulations demand that the policies on sales and transport of draft cattle be readjusted correspondingly, peasant households be allowed to jointly sell and transport draft cattle and peasants also be allowed to individually sell and transport draft cattle. With the agreement of a production team and with the approval of an industrial and commercial administrative department, cars and ships can be used to transport draft cattle for the purpose of sales. The new regulations state that it is essential to strictly distinguish the normal sales and transport of draft cattle and making rational profits, from speculation, profiteering and reaping staggering profits. Moreover, it is imperative to further strengthen the management of the draft cattle market, protect legal transactions and curb illegal activities. No one is allowed to carry out a transaction outside the market and to buy and sell draft cattle in other places. Those who speculate in and steal draft cattle must be severely dealt with in coordination with public security, political and legal organs. [HK140823 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 8 Dec 82]

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GUANGXI CIRCULAR ON THREE FIXES IN FORESTRY

HK101152 Nanning Guangxi Regional Service in Mandarin 1130 GMT 9 Jan 83

[Text] On 7 January, the regional CPC committee and the regional people's government issued a circular demanding that all places grasp firmly and well three fixes in forestry [fixed rights of forests, fixed private forests and fixed forestry production responsibility system]. The regional CPC committee and the regional people's government issued this circular when they approved and transmitted the report of the regional forestry bureau on the current situation of three fixes in forestry in our region.

The circular points out: Doing well in three fixes in forestry is an important measure for vigorously developing forestry and the economy. All places must attach great importance to this work. CPC committees and governments must organize forces in a unified way and make unified arrangements for this work. While ensuring good quality, we must speed up this work and strive to complete this work before the busy spring transplanting season this year.

On the issue of greening private mountains and greening mountains which have been contracted for, we must emancipate our minds and adopt a firm attitude. Production teams which have barren mountains must adhere to the principle of allocating barren mountains to commune members as far as possible and must allocate mountains to commune members for private use or contract with commune members for the lease of mountains. The area of private mountains of a production team which has many barren mountains can be 20-30 percent of the land used in forestry. It must also be announced that these private mountains are to be used by commune members for a long period. In addition, commune members can contract with production teams for a long lease of mountains in order to speed up afforestation.

In the area of stony mountains, allocation can be made according to mountaintops. In places where three fixes have been completed, it is necessary to check this work before acceptance. Those which cannot measure up to the requirements must make up for what has not been completed. It is essential to avoid doing things perfunctorily and superficially.

In its report, the regional forestry bureau has summed up the results achieved and the experiences gained since three fixes in forestry in our

region began in the autumn of 1980. It has pointed out existing problems and put forward four views on how to unfold current work in three fixes in forestry:

1. In accordance with the regional CPC committee's arrangements for three fixes in forestry and for the completion of this work by the winter of 1982 and the spring of 1983, with a county as a unit we must organize a special work team to step up this work in a well-guided and systematic way before the Spring Festival.
2. We must adhere to the five criteria for three fixes in forestry and complete work of three fixes in an all-round way.
3. We must persist in allocating mountains to commune members for private use and allow commune members to contract for a long lease on mountains.
4. In conjunction with work of three fixes in forestry, we must seriously investigate and deal with cases of the indiscriminate felling of trees and with disputes concerning mountains.

CSO: 4007/70

BRIEFS

STATE FARM CONFERENCE IN NANNING—The third national conference on state farm economy was held in Nanning from 4 to 10 December. This conference, jointly sponsored by the Chinese Research Institute of State Farm and Land Reclamation Economy, the Research Institute of Agricultural Economy under the Chinese Academy of Social Sciences, the Guangxi Academy of Social Sciences and the Guangxi Regional State Farm and Land Reclamation Department, mainly dealt with major problems existing in the development of state farm and land reclamation economy. Eighty-two theses and investigation reports were submitted to the conference. Present at the conference were 133 representatives from 85 units including departments under the Ministry of State Farms and Land Reclamation, departments concerned of the Academy of Social Sciences, institutes of higher learning, scientific research units, press and publication circles and so on. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 12 Dec 82 HK]

YULIN PREFECTURE FISHERY DEVELOPMENT—Yulin Prefecture's total output of fresh water fish in 1982 reached 181,140 dan, an increase of 26.3 percent over 1981. Output in the eight counties throughout the prefecture all increased. The prefecture has an area of 360,000-odd mu of water surface for breeding fish. According to statistics, some 139,440 mu of this 360,000-odd mu of water surface for breeding fish was run by the collectives of communes and brigades in 1982. Of this 139,440 mu of water surface, the collectives of communes and brigades tendered for breeding fish on 98,950 mu of ponds. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 9 Jan 83 HK]

WINTER PLOWING—Rural commune members throughout the region have paid close attention to winter plowing. Recently, the whole region has plowed 8.44 million mu of cropland and 3.27 mu [as received] of uncultivated land, prepared over 500,000 mu of soil for sowing maize, protected more than 3 million mu of various kinds of crops and achieved marked results in collecting manure, repairing water conservation works and improving low-yield land. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 10 Jan 83 HK]

ANIMAL HUSBANDRY WORK CONFERENCE DISCUSSES PRODUCTION PROBLEMS

Beijing NONGYE JINGJI WENTI [PROBLEMS IN AGRICULTURAL ECONOMICS] in Chinese
No 10, 23 Oct 82 pp 49-52

[Text] A north China Animal Husbandry Work Conference was held on 6-15 August 1982 in Harbin City of Heilongjiang Province, under the auspices of the Ministry of Agriculture, Animal Husbandry and Fishery. The new conditions, new experiences, and new problems of animal husbandry production in north China were extensively discussed, including the following major aspects:

(1) The Problem of Further Perfecting Systems of Responsibility With Respect to Animal Production and Grassland Management

At present, various forms of systems of production responsibility have been put into practice in more than 90 percent of the commune-brigades in regions of animal husbandry. There are basically the following two forms:

The first is the responsibility system of "several indices with one bonus." Under the condition of unified plan management, unified accounting, and unified distribution, the basic accounting unit establishes contacts with households or teams for all the different herds of animals according to the type of animal, the grassland, and the condition of labor, with fixed indices of labor requirement, production, expenditure, grassland usage, and facilities, to link production with reward and provide a bonus for above quota production and a penalty for below quota production. This system is being practiced in Qinghai, Xinjiang, and the majority of the production brigades of the two prefectures of Aba and Ganzi of Sichuan Province. The merit of this system is that it has been practiced for many years in many places so that the cadres and masses are more familiar with it and its practice is easier. It is obviously in accordance with specialization and division of labor; therefore, it is favorable for improving animal breeds and reasonable utilization and construction of grasslands. It has the advantage of utilizing the merits of the collective economy while at the same time encouraging positive production from every herdsman. Currently, the following aspects [of the system] are in need of further perfecting. However, with some commune-brigades, the contents of the fixed indices are not sufficiently inclusive to make them difficult to implement. For example, there are no expenditure indices to cause the cost to be too high. Or, the contents of the production index do not include quality requirements. In some cases, the production index is either too high or too low. The distribution link is overly complex and in some places there are no systems of responsibility for grassland management and construction or for rewarding cadres in accordance with the production.

The second is the large-scale contract production responsibility system. With this system, the unified management of animals, grassland, and other productive materials by the collective body persists, but the collectively owned animals are divided according to the population and labor [availability] to be raised by households through contracts, with guaranteed cost and value and a percentage of the foals after submitting a portion to the collective as public accumulation and management expenditure. The annual quotas for live animals and animal products to be delivered to the state and the quota to be retained by the collective are proportionally divided for fulfillment among the individual households, while the income reverts to the households. In Nei Menggu, Gansu, and Xizang, this responsibility system is practiced by 72, 91, and 95 percent of the accounting units, respectively. The merit of the system is that the fruits of labor of the herdsman are closely linked with the economic benefits; therefore, it savors raising production efficiency, reducing the cost, simplifying the cadre corps, and bringing down expenditures. During the discussion, all agreed that the important thing with respect to this responsibility system is to consider the interest of all three sectors of the state, the collective body, and the individual, under the premises of strengthening unified management. Items in need of perfecting include: (1) Instead of grazing mixed herds of all kinds of animals, the herds should be divided for grazing among the households; (2) The right to use the grassland and the task of maintaining them should be assigned to a household or group of households to change the situation of "all share the use of grasslands [and no one takes care of them.]" (3) Unified management of breed improvement, and control and treatment of animal diseases should be practiced to sign contracts and to impose penalties for violating rules. (4) Special persons should be assigned to manage and protect collectively owned forests, trees, large machines, etc.; reasonable fees should be charged when the animal husbandry teams or a group of households want to use them. (5) The quantity of live animals and animal products to be delivered to the state should be delivered by the production brigade in a unified manner. (6) Out of the portion retained by the collective body, considerations must be given to meet the subsidies and payments to families of soldiers and martyrs, the five protected households, the cadres of the brigade, and teachers of local schools.

Participants at the conference agreed that in the process of perfecting the production responsibility system, the following four principles must be strictly upheld: While encouraging positiveness of the masses of herdsman and cadres, the collective economy must be stabilized. The interest of the state, the collective body, and the herdsman must all be taken into consideration. While resolving current problems of production development, problems of long-term development should also be taken into consideration. While first encouraging a portion of the members of a commune to become rich, attention must also be given to resolve the problem of hardship households. Under these principles, the various localities may select different forms of responsibility systems on the basis of the locality's concrete conditions in finding a suitable form for it. Whatever the problem is, resolve it instead of following one model adopted to fit all different localities. With respect to the implementation of the responsibility system in grassland management and construction, some successful experiences have been created by some counties (banners), communes, and brigades in Nei Menggu, Xijiang, Qinghai, and Heilongjiang. They have resolved,

relatively effectively, the problem of "sharing grasslands without taking care of them." The experiences include mainly the following: (1) Dividing up [grasslands] on level after level from the county (banner) to the commune to the basic accounting unit to determine grassland use rights and to issue grassland use certificates. (2) The communes, brigades, and production teams organize specialty teams to manage and construct the enclosed grasslands and man-made grasslands operated by the collective bodies with reasonable distribution of the profits. (3) The method of grazing in alternative summer and autumn sites is restored to protect winter and spring grasslands; the management and education of workers of animal husbandry are strengthened. (4) Masses are organized to form alliances of households to enclose and build up grasslands; those who perform the work receive the benefits. (5) For animals privately owned by commune members a grassland construction fee and a management fee should be collected. Practice has proved that after the above measures are adopted, the management and construction of meadows and grass-covered mountains are strengthened and the development of animal husbandry is positively promoted. In 1980, the Gubalin Right Banner of Nei Menggu had four alliances of households which enclosed and built up 131 mu of grassland. By the first half of this year the banner had 63 alliances of 497 households to build up 32,530 mu of grasslands. Last year, the Zhaoyuan County of Heilongjiang implemented the grassland management and construction responsibility system for 80 percent of its grasslands and large acreages of deteriorated grasslands were thus protected and enclosed for restoration resulting in doubling and tripling the yield of hay. It has been estimated that if all the current 1.76 million mu of grasslands of the county are managed well, there may be an increase of yield of hay totaling 170 million jin and the number of animals raised may be doubled.

(II) The Problem of Strengthening the Management of Privately Owned Animals in Regions of Animal Husbandry and Accelerating the Development of Draft Animals in Agricultural Regions

In recent years due to implementation of the policy of commune members privately owning animals, the development of privately owned animals has been rapid in pastoral regions. According to statistics presented at the conference, the current ration of privately owned animals and the per capita heads of animals in these regions are as follows: 28.5 percent in Nei Menggu, 5.3 heads/person; 25 percent in Xinjiang, 7.58 heads/person; 13 percent in Qinghai, 5.6 heads/person; 25 percent in Sichuan, 0.8 heads/person; 55.3 percent in Ningxia, 1.5 heads/person, 15.1 percent in Gansu, 1.6 heads/person, 20 percent in Xizang, 8.4 heads/person. The development of privately owned animals has had positive effects on improving the lives of the herdsmen, increasing their income, and adjusting the market supplies and demands. In 1981, the commune members of Aletai Prefecture of Xinjiang received an income of 6.88 million yuan from selling privately owned animals to the state, amounting to an average income of 170 yuan per household. Last year, a total of 90,000 beef cattle were purchased from the autonomous region and of these, 50,500 heads were privately owned, amounting to 56 percent. In the past, if a herdsman of the pastoral region wanted to spend some money to buy sheep, he had to look for the party secretary and to implore the head of the brigade to grant him an approval. Sometimes, he would be running back and forth for several tens of li without obtaining any result. Now, with the privately owned animal system, he can solve these

problems by himself. All the herdsmen are very pleased with it. However, after the implementation of the policy of privately owned animals, some new problems have emerged. They are mainly: (1) In some localities where the development of privately owned animals has been rapid, they compete with animals of the collective for grassland space and this hastens its deterioration; (2) although privately owned animals are numerically counted, selling them to the state is not required; this results in pressure on the collective to use this to fulfill the state purchase quota and this affects their development; (3) in some localities, privately owned animals are not included in its breed improvement and disease control plans which cause confusion in the superior variety breeding lines and the epidemic controlling agencies; (4) individual households have been raising too many privately owned animals and have tended to become separated from the collective and unwilling to raise animals belonging to the collective. For these reasons, it is believed that in order to guarantee the healthy development of animal husbandry in pastoral regions, the management of privately owned animals should be strengthened and the following points should be clarified: (1) The nature of privately owned animals as an auxiliary and necessary supplement of the socialist collective economy must be confirmed; (2) There should be no limit to the quantity and variety of privately owned animals and hardship households with too few privately owned animals should be encouraged and supported; (3) Wherever there is rapid development of privately owned animals, the management of these animals should be strengthened. The provinces of Nei Menggu, Xinjiang, etc., have adopted some measures to manage privately owned animals. For example, grasslands for grazing privately owned animals are reasonably arranged and privately owned animals are not allowed to compete with or forcibly edge out collectively owned animals grazing in grasslands; privately owned animals are included in the purchase plan of the state as part of the animal products purchase tasks; privately owned animals are included in the local breed improvement and disease control plans; fees for grassland management, equipment maintenance, epidemic control, mating, etc., are collected on privately owned animals.

With regard to the problem of draft animals in agricultural regions, generally speaking the quantity of large animals has been increasing each year for the past few years, but the development is very uneven. In the 17 provinces, cities, and autonomous regions of the north, the number of large animals was reduced 393,000 heads in the first half of last year, amounting to a reduction of 2.6 percent in 9 provinces and cities. The reason for the reduction was analyzed at the conference. It was believed to be that in many localities the responsibility system for raising large animals has not been correspondingly established following the establishment of the agricultural production responsibility system. There remains the general phenomenon of an animal which does the plowing being fed here and there, or an ox being turned away at feeding time. Some localities have suffered from natural calamities and a reduction of grain yield causing some loss of animals as well.

It was noted at the conference that after the responsibility system was adopted in Zhoukou Prefecture of Henan Province, a reasonable value was assessed for draft animals to guarantee the cost and the price and households were assigned to raise them. That prefecture now has 850,000-plus heads of animals raised by households, amounting to 99.3 percent of the animals in the prefecture. Since 1979, through local breeding and purchase from outside, the prefecture has increased the number of large animals by 333,000 head amounting to an increase of 17.7 percent every year.

In some localities where the system of specialty commune-brigades is practiced as a responsibility system which links production with rewards in agricultural production, special persons are clearly assigned the job of raising and feeding the animals, or special persons or teams are assigned the job of driving the animals to perform tasks; this has been done with a method of awards and penalties. The result has also been very good. During the discussion, all believed that the problem of disease control and breed improvement for draft animals is worthy of attention. Animal Husbandry and Veterinary Stations must strengthen their guidance in the control and treatment of diseases of draft animals and in their work of serving the domestic animal mating and improvement stations.

(III) Concerning Problems of Specialization and Socialization of Animal and Fowl Production

In the past 2 to 3 years, a new form of organization has appeared in China's animal husbandry--animal feeding specialty households. According to the incomplete statistics of the Ministry of Agriculture, Animal Husbandry and Fishery, the country now has 560,000-plus such households, 17.7 million key households; together they raise more than 10.09 million heads of animals, 58.15 million fowls, and 12.18 million rabbits. The experience of many localities has proved that the system of specialty households has the merits of using little capital to show fast results, low cost, good benefits, high rate of commercial grade products, and vast number of willing applicants. This may be a fairly good way of arranging the surplus manpower in rural villages, changing the agricultural production structure, resolving the problem of supplies for the cities, quickly increasing the wealth of rural villages, realizing specialization, commercialization, and socialization of agricultural production.

According to the survey of a related department, at present China has 80 large and medium cities. Of these 52 cities are located in the north, with a total population of 50.67 million persons, amounting to 68 percent of all the population of the 80 cities. All these cities have, in varying degrees, the problem of insufficient supplies of meat, milk, eggs, and fowl. Efforts have been made to resolve the problem in recent years; preliminary results have been obtained and experiences have also been accumulated. In general, there are the following three types of solutions to the problem.

The first is the Qiqihar City type. There, the state-operated chicken farms and dairy farms form the backbone. But at the same time all out efforts are exerted to develop households for chicken farming and dairy farming, etc., in both the city and the countryside, with the state developing superior breeds, supplying feeds and feeding techniques, purchasing fowl and eggs, and providing effective support in such aspects as the control and treatment of diseases and epidemics, to help make these households the major source of supply of eggs and milk. In 1981, the city had 8,400 commercial chicken farming households which raised 520,000 chickens, amounting to 74.3 percent of the total stock of commercial chickens of the city; 9.06 million jin of eggs were delivered for purchase, amounting to 85 percent of the total commercial eggs purchases. In the city, the annual supply of fresh eggs averaged 11 jin per person, fresh milk 39 jin per person. Basically there was a plentiful supply of eggs and milk making the city more than self-sufficient.

The second is the Harbin City type. There state-operated dairy farms and breeding farms form the backbone for a practice of unity of state-operation, collective bodies, and private individuals. At present, the city has 12,000 households specializing or emphasizing animal and fowl farming. There are 45 chicken coops, housing 1.5 million layers, amounting to 70 percent of the total raised in the city. A total of 1,439 dairy farming households have been developed to raise 2,460 dairy cows, amounting to 27.4 percent of the total in the city. In 1981, 5.28 million jin of fresh eggs and 36.64 million jin of fresh milk were purchased in the city. In the past, coupons have been needed for fresh eggs for New Year and other festivals; now every household is supplied with more than 1 jin per month. The supply of fresh milk basically meets the needs of the inhabitants of the city.

The third is the Beijing City type. There, state-operated mechanized chicken farms form the main supply, with additional chickens raised by collectives and commune members, supplying two-thirds of the needs of fresh eggs in the capital. In the first half of this year, 43.26 million jin of fresh eggs were purchased (37.5 percent from state-operated farms, 18 percent from collectives and 44 percent from individuals.) A list of industrial chicken farm experiences has been noted so that every state-operated and collective chicken farm has more than sufficient supplies. The supply of fresh milk remains tight; only about half of the needs can be satisfied. It is believed that the experiences of specialized and key households of animal and fowl farming in Harbin, Qiqihar, and other localities are suitable for the present conditions of China and they should be promoted for further development. For this purpose, the following items of work are necessary:

(1) Raise the understanding of the importance and function of developing specialized and key households so as to eliminate the influence of leftist thought. The specialized and key households appear as new creations. They are the embryonic form of specialized producers of commercial products. It is a transition toward specialization and socialization of rural villages and has far-reaching and profound significance. Leaders at all levels should raise their consciousness to carry out serious studies and to adopt measures to promote the development of specialized and key households in a healthy direction.

(2) There should be a policy of earnest support of households which raise animals and fowl, but there should also be a clear-cut demarcation between getting rich through labor and through speculative opportunism. For those outstanding, specialized, or key households, there should be no attempt to scandalize or obstruct. Proper measures should be adopted to allow those who are able, to operate and truly develop their functions. Meanwhile, based upon the concrete conditions in each locality, the specialized households should be allocated feed grain and land for growing feed and the problems of seeds and capital and other difficulties should be resolved. In some places, if local conditions permit, the specialized households should be allowed not to take on crop contracts or take on contracts for very small pieces of land so that they may devote themselves specially to feeding animals, delivering animal products to the state, paying the state agricultural tax and grassland management fees, and providing the collective with accumulations [savings] to the common welfare fund for not working at the task of growing grains.

(3) The necessary cooperatives and alliances should be well organized. Through these new forms or other forms of service stations (companies) the specialized households devoted to developing superior breeds, processing feeds, preventing epidemics and diseases, processing products, advising on technologies and sales should be brought together like various links of a chain to become an organic entity. Through close coordination of related departments, Harbin City has made it possible to buy chicks and yearlings, to buy feed, to prevent and treat diseases, and to sell animal products without having to leave the village. From all directions, the scattered specialized households should be absorbed into the periphery of the socialized productive system and use the form of technical and economic contracts to bring their production into the track of socialist planned economy.

(4) The leadership should be strengthened to coordinate all related departments closely and capably.

(IV) Construct Grasslands (Including Grassy Mountains and Slopes) Well to Cause the Development of Animal Husbandry To Be Established on a Stable and Reliable Foundation.

Hay and feed are the material foundation for developing animal husbandry. Delegates at the conference believe that after the production responsibility system has been established in animal husbandry, the contradiction between grass and animals will become the major problem of production in the pastoral regions. According to reports of Nei Menggu, in 3 decades, the animals of the autonomous region have increased from 8.41 million heads to 42.55 million heads, an increase of 4.05-fold, but the production of hay has not increased very much. Many natural grasslands have deteriorated and the productivity dropped heavily. It is estimated that serious deterioration has occurred to about one-third of the grasslands of the region and the yield of hay has dropped about one-third. Due to lack of hay, a large number of animals die or lose weight during the winter and the spring. Statistics for 25 years indicate that in the region, dead animals totaled 64.92 million heads, the equivalent of 89.4 percent of the commercial animals sold to the state. The loss every year from loss of weight is estimated to be even higher than the loss from death. In the 32 years since liberation, the development of animal husbandry in Xinjiang has been slow and the production level low. There has been an increase of only 1.7-fold in the number of animals. On the average, each sheep in the holding pen produces only 3.2 kilograms of meat; every 100 mu of grassland produces only 18.7 kilograms of meat. This has been due mainly to insufficient long-range attention given to the construction of pastoral areas and the improvement of production conditions, while land reclamation was blindly pursued causing serious degeneration of grasslands.

All delegates believe that first, if grasslands are to be well constructed, the leaders at all levels must give the subject ideological emphasis and change the tendency of preferring grains at the expense of animals or emphasizing animals but neglecting the grass (feed). They must include the production of hay in their daily agenda and the construction of grasslands in the plan of the state. They must implement the policy of "overall planning to strengthen protection, reasonable utilization, and construction." Aside from implementing the policy

of grassland rights, responsibilities, and benefits to encourage the masses to be positive in protecting, reasonably utilizing, and constructing grasslands. Some technical measures should also be applied according to local conditions. Second, the rule of "using the quantity of grass to determine the quantity of animals" should be carried out. On the basis of emphasizing the increase of hay production, animal husbandry production should be arranged according to the condition of the hay. When or where there is a serious deficiency of hay or a serious natural calamity, a plan should be formulated for active disposition of many of the animals to reduce the loss from death and to increase the wealth of the society. Instead of passively resisting calamities, disasters should be actively prevented. Third, the structure of herds should be adjusted to accelerate the turnover and increase the economic benefits. The pressure on the winter and spring pastures should be relieved. For example, Altai Mountain Region of Xinjiang has the experience of tending the large-tail brown lambs of Fuyun County too long. These can be sufficiently fattened for butchering in the same year they are born reducing the butchering time from the original 18 months to 5 months. When 1981 is compared with 1977, the number of ewes in the region has increased 25.7 percent and the number of all animals 10.8 percent, the butchering rate 8.9 percent, the commercial product rate 2.1 percent, and the death rate of grown animals has been reduced 4.3 percent. Fourth, the production of manmade artificial grass planting should be developed. Artificial and semiartificial grasslands should be constructed. Communes should establish bases of fodder-seed production to strive for self-sufficiency in grass seed supply. Fifth, there should be planned and gradual retirement of cropland created through blind reclamation or cropland of very low unit yield, for afforestation, grass planting, and grazing. Since 1973, the Hutubi Dairy Farm of Xinjiang has retired an additional 3-5 percent of low-yield grain-producing cropland every year to plant alfalfa and to practice a cropping system of rotating grass with crops to promote an overall development of agriculture, forestry, and animal husbandry. Before 1972, the dairy farm lost an average of 495,000 yuan every year. In 1981, it realized a profit of 425,000 yuan. Problems concerning joint enterprises of animal husbandry, industry, and commerce, the policy of purchasing animal products and their prices, etc., were also discussed at the conference; some valuable opinions and suggestions were presented.

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PROVINCIAL MEETING OF RURAL MODEL WORKERS REPORTED

HK120904 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 11 Jan 83

[Recorded report: "Conference of Advanced Units and Model Workers on Agricultural Front Solemnly Opens in Zhengzhou This Morning"]

[Summary] The opening meeting was held at the Henan People's Auditorium. Liu Jie, first secretary of the provincial CPC committee, and Zhao Wenfu and Han Jingcao, secretaries of the committee, attended the opening meeting. At 8:30 am, the meeting began and Han Jingcao, secretary of the Henan Provincial CPC Committee and vice governor, presided over the opening meeting and Vice Governor He Zhukang gave the opening speech. In his speech, he greeted the participants and stressed the importance of the meeting. He said that through carrying out the party's policies, great achievements have been scored and a very fine situation has emerged on our agricultural front, but we have to continue to strive in order to achieve our magnificent goal.

"Vice Governor Cui Guanghua delivered to the meeting a report entitled 'Make Persistent Efforts, Forge Ahead With Courage and Create an Overall New Situation in the Modernization of Our Province's Agriculture.'"

"The report consists of four parts: 1) An unprecedented new situation has emerged in our province; 2) advanced collective, model workers and advanced workers have played the leading role in speeding up the development of our province's agriculture; 3) we should develop our achievements and make persistent efforts to make our province's agriculture prosperous; and 4) we should strengthen our leadership and it should be carried out in depth and in a sustained manner in order to achieve new and greater victories."

"He said that in future the guiding ideology and strategic goal in developing agriculture is to conscientiously implement the line, principles and policies formulated by the 12th party congress, continue to emancipate our minds, have the courage to carry out reforms, rely on the peasants and intellectuals throughout the province in order to achieve an all-round development of agriculture, forestry, animal husbandry, sideline undertakings and fishery, combine the management of agriculture, industry and commerce, shift our agricultural economic work onto the orbit centering on raising economic results, achieve the goal of quadrupling output value and revolutionizing our minds, dedicate our strength to building a new socialist

countryside with a high degree of material and spiritual civilization, speed up the modernization of our agriculture and make our peasants rich as soon as possible."

He said that the key to achieving the goal of quadrupling output value is to conscientiously and satisfactorily do our work in the coming 3 years. We should strictly control population growth, rationally utilize our natural resources and protect our ecological environment. On the above prerequisites, we should vigorously and soundly reform our agricultural economic structure and the system of the administration and management of our agriculture and transformation technology. We should develop grain production and all other cultivation and undertakings and blaze out a path of developing socialist agriculture with our country's distinguishing features.

We should continue to stabilize and perfect the production responsibility system which has already been set up throughout our countryside. We should allow the masses to choose the forms of the system as they please. Never should we interfere with their choice. We should help them solve the problems they meet in the process of developing and perfecting these forms of the responsibility system. "The forms of specialized households and new economic combinations that have emerged in various localities can to a greater extent tap the potential of labor, technology, funds and other resources in our rural areas and develop, under the guidance of the state plans and in an all-round manner, agriculture, forestry, animal husbandry, sideline undertakings, fishery, initial and final processing of agricultural products and all other kinds of undertakings. They can help us to raise our economic results and continuously strengthen the material foundation of our socialist rural economy. We should adroitly guide our actions according to circumstances, continuously sum up our experiences and promote the development of rural commodity production and the prosperity of rural economy."

In conclusion, he said that the 1980's is a period of great importance in the history of our party and country and the beginning of a new period. Our future is bright and magnificent. The year of 1983 is the first year in carrying out the task of creating an overall new situation in our socialist modernization, a goal put forward by the 12th party congress. It is also the first year in implementing the new constitution. In the new year, we should make progress in doing all our work. We should pay very close attention to our agricultural work and continue to implement the principle of "relying first on policies and second on science." We should strive to set new records in our grain, cotton, and oil output, greatly develop all the diversified undertakings and raise our level of science, technology and management to a new high. In order to speed up the development of our rural economy, we must pay attention to the two kinds of production simultaneously. We must satisfactorily do the work of planned parenthood and really achieve a reduction in the rate of our population growth. We are confident that as long as we steadfastly carry out the spirit of the 12th party congress and the 5th Session of the 5th NPC, rally around us the strength of all sectors, give play to all positive factors and mobilize all the people to work hard with one heart and one mind, we will surely be able to overcome all the difficulties and create an overall new situation in our province's agricultural development and achieve the great goal that has never been attempted by our forefathers.

BRIEFS

HENAN TRADE FAIR--A provincial agricultural, scientific and technological exhibition and exchange trade fair sponsored by the provincial science and technology commission and the agricultural commission opened today in the provincial agricultural scientific and technological exhibition hall. The opening ceremony was presided over by Lo Gan, vice governor and provincial science and technology commission director. Cui Guanghua, provincial vice governor and agricultural commission director, delivered a speech at the ceremony. Dai Suli, provincial party committee secretary and governor, cut the ribbon at the opening ceremony. There are 427 units taking part in the fair, and 689 items are on display, of which 15 won state scientific and other prizes and 126 won provincial scientific and technical prizes. Various units are presenting their transferable scientific and technical achievements. They have put forward 46 difficult technical questions in production and are publicly looking for competent people to tackle them. Such a trade fair is being held for the first time in the province. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 15 Dec 82 HK]

CSO: 4007/70

BRIEFS

HUAIYIN PREFECTURE AGRICULTURE—Huaiyin Prefecture, Jiangsu, reaped an all-round good agricultural harvest in 1982. The prefecture's total grain output in 1982 was 9.57 billion jin, an increase of 1.52 billion jin over 1981; cotton output was 1.1 million dan, a 10 percent increase over 1981; and oil-bearing crops totaled 3.3 million dan, a 70 percent increase over 1981. [OW130925 Nanjing XINHUA RIBAO in Chinese 17 Dec 82 p 1]

CSO: 4007/70

KONG FEI DELIVERS GOVERNMENT WORK REPORT

Agricultural Production

SK220529 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 21 Dec 82

[Text] In his government work report to the fifth session of the fifth regional people's congress, Kong Fei, chairman of the regional people's government, pointed out that grain production occupied an important place in the national economy.

He said: The vast cultivated lands in our region—including areas irrigated by channeling Huanghe water, the Lingdong and Lingnan areas, the areas along the western bank of the Nenjiang, the Shiliaohe valley and beaches, rivers and lands near the Yinshan Hill—are suitable for building into base areas for planting marketable grain. We should make good plans in line with local conditions and build these areas in a planned and step-by-step manner. We also should attend to increasing per-unit grain yield and total grain output.

Kong Fei said: While attending to grain output, we should, under the circumstances of fulfilling our state tasks, enthusiastically develop a diversified economy which is the best principle for guiding agricultural production. In developing the diversified economy, we should make full use of the byproducts of agriculture, livestock and forestry, do a good job in the processing industry and enthusiastically develop the commodity economy so that we can engage in production, processing, sales and comprehensive development, by which peasants and herdsmen will soon become rich.

He urged governments at all levels to pay attention to fish output, to try every means possible to develop fish breeding, and to construct base areas for developing marketable fishes and to enliven rural and urban markets. Attention should be paid to vegetable production in suburban areas to solve problems of urban residents who have difficulty getting vegetables by signing contracts with dealers and implementing them.

Animal Husbandry

SK220538 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 21 Dec 82

[Text] In his government work report, Kong Fei, chairman of the regional people's government, stressed: Efforts should be made to further stabilize, improve and perfect the various forms of systems of responsibilities for agricultural and livestock production, focusing on large-scale assignment of responsibilities to households or groups.

He said that the system should be stabilized so long as the masses like it. Kong Fei said: Since the third plenum, rural and pastoral areas in our region have been implementing various forms of responsibility systems for agricultural and livestock production, focusing on large-scale assignment of responsibilities to households or groups. Through the implementation, we know that the responsibility system has direct advantages, is distinct and easy to deal with, ensures peasants and herdsmen's self-ownership, overcomes the egalitarian distribution system, is suitable for the development of production growth and is good for mobilizing the masses' enthusiasm about production.

On the issue of responsibility systems for livestock and forestry production, Chairman Kong Fei said: We should conscientiously sum up the pilot work experiences in implementing the regulations on the management of grasslands. We should regard a production brigade as the unit to which to assign the right to use grasslands and pastoral areas and regard a household or a group that is fixed a certain livestock output as the unit to delimit proper pastoral lands and to make plans for rational use and construction of pastoral areas.

Efforts should be made to solve the problem of "everybody eating from the same big pot" in pastoral areas.

We should firmly attend to stabilizing the ownership of mountainous areas and forests, to delimiting private-owned mountainous areas, to enhance the management of forest, to accelerate afforestation and the planting of grass and to develop barren hills, sandy areas and uncultivated hillsides.

Comrade Kong Fei said: Since the beginning of this year, our region has set up a large number of specialized households and groups and key households in various localities. This is a way to develop specialized commodities and a good method for rural and pastoral areas to develop specialized production.

All localities should strengthen their leadership to offer funds, techniques, and forage and to help do a good job in purchasing and selling.

Agricultural Science, Technology

SK221044 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 21 Dec 82

[Text] In his government work report, Kong Fei said: The development of agriculture should rely on science. He urged departments in charge of science and technology to concentrate scientific and technical research on solving problems in agricultural and livestock production and simultaneously to propagate advanced agricultural science and technology.

Comrade Kong Fei said: Government at all levels and relevant departments should enthusiastically help peasants and herdsmen study science, apply scientific knowledge, propagate and apply scientific and technical results and vigorously popularize scientific agricultural and livestock knowledge. Special attention should be paid to selecting and cultivating fine seeds and to studying scientific techniques for applying fertilizer to enable the broad masses of scientific and technical personnel to directly serve production. On a broader scope, they can popularize the responsibility system of giving technical guidance and receiving remuneration on the basis of output. Efforts should be made to develop specialized households and pilot households to grow crops with scientific methods and to turn scientific technology to strengthening production with a view to increasing agricultural and livestock production.

He said: In the development of agricultural and livestock production, we have to start with ecological control and fundamentally improve production conditions. We should also mobilize the masses to build farmland and pasture-protection forests, water and soil conservation forests, forage forests and charcoal forests as quickly as possible to offer protection from wind and sand and to control soil erosion.

CSO: 4007/70

DEZHOU PREFECTURE REAPS BUMPER COTTON HARVEST

Jinan DAZHONG RIBAO in Chinese 10 Oct 82 p 1

[Article: "Dezhou Prefecture Again Reaps Bumper Cotton Harvest; Purchase Volume Has Exceeded Two Million Dan"]

[Text] Dezhou Prefecture has again this year reaped a bumper cotton harvest. Vast numbers of cotton growers have been beaming with smiles as they vie with one another to sell the new cotton. By 9 October, more than two million dan of new cotton had been purchased in the whole prefecture, which is 3.9 times the purchase volume of the corresponding period last year [1981]; since 5 October, the average daily purchase volume has exceeded 80,000 dan surpassing last year's highest daily purchase volume.

This year, Dezhou Prefecture's nearly four million mu of cotton has developed early, has had multiple summer bolls, has bloomed early and ripened well, has had high degree of gin turnout and has been of good quality. This is the peak season for cotton picking and sales, and the silver flowers are in full bloom everywhere, laying on the ground like snow. The carts which deliver the cotton are streaming like long dragons toward the cotton processing factories and purchasing centers. A responsible person in the concerned prefectural department told the reporter that, considering the storage capacity in the cotton fields and in the common households, as well as the current sales trend, compared to last year, there will be a large-scale increase in the cotton crop this year. Despite expanding the cotton harvesting and storage space in the prefecture by more than 3,200 mu and adding more than 300 sets of scales for cotton harvested and the corresponding numbers of procurement personnel, and moreover, practicing fixed-point, cut-off purchasing methods at the agreed time, it was still difficult to completely solve the "difficulties of cotton selling" problem. The leadership at all levels and the procurement personnel have been working intensely round the clock, trying hard to reduce the waiting period for commune members to sell cotton and are determined to promptly and safely complete the purchase of the bumper cotton harvest.

12267

CSO: 4407/55

YANTAI PREFECTURE OVERCOMES DIFFICULTIES IN WHEAT PLANTING

Jinan DAZHONG RIBAO in Chinese 12 Oct 82 p 1

[Text] Editor's note: The suitable season for fall planting is short. The most critical period for firmly seizing the opportunity to plant the wheat in the right season has arrived. The latter period of the fall planting is generally the fairly arduous stage of completing the task of wheat planting. For example, some fall crops are harvested late, and crops must be rotated in the midst of the rush to plough and plant; the wheat cannot be planted in some areas because of drought and lack of moisture in the soil; some poor brigades and households cannot plant the wheat because of such things as lack of funds and labor. These conditions need to be brought to the attention of the leadership at all levels in the rural areas. The greater the difficulties, the greater is the need for the leadership to go to the front lines to solve the problems. It is hoped that all areas will strengthen the leadership of the poor communes and brigades in the fall planting work, specifically help to solve the actual difficulties, work ceaselessly and unrelentingly, and resolutely succeed in this fall planting.

With the great spirit of the Twelfth National Congress of the Communist Party as its impetus, Yantai Prefecture has aroused vast numbers of cadres and masses to carry forward the indomitable revolutionary spirit of risking one's life in struggle, has worked ceaselessly and unrelentingly, has determined to fight the arduous battle to resist the drought and sow the wheat, and has gone all out to complete the task of sowing the prefecture's 8 million mu of wheat.

Jiaodong prefecture has experienced a long drought, is unusually short of water sources, and in addition, energy sources are in short supply, making the task of resisting the drought and planting the wheat increasingly difficult; fear of the difficulty is increasing among the cadres and commune members. Confronted with this situation, the Chinese Communist Yantai Prefectural Party committee which has been fighting in the vanguard

to resist the drought and complete the planting, and leading members of every county and commune Party committee, have fully aroused the masses and are determined to successfully fight the arduous battle to resist the drought and sow the wheat. In the whole prefecture, the commune which has been most seriously hit by the drought is Chengshanwei Commune in Rongcheng County. Little more than 270 mm of rain has fallen in the whole commune this year, and 48 of 54 production brigades have even been short of drinking water. Faced with the difficulty, the commune Party committee has been determined, has inspired enthusiasm, while studying and spreading the implementation of the spirit of the Twelfth National Congress of the Communist Party on the one hand, has made a concentrated effort to prospect for water sources, and has led the masses to dig for water to resist the drought and accomplish the planting. The whole commune has assembled more than 400 cadres and commune members, and four bulldozers to excavate for water, pumping while digging at the forest region sandy beach, in the east of the city, the only place in the whole commune which could be focused on for exploitation. The whole commune's 245 tractors have been thrown into transporting the water, and a more than 10,000 strong labor force has persisted in fighting bravely round the clock, enabling the rate of progress of the fall planting to be greatly accelerated.

While leading the broad masses in fighting the arduous battle to resist the drought and accomplish the fall planting, the Party organizations on all levels in this prefecture have paid attention to the application of policy to arouse the enthusiasm of the masses. After having carried out various forms of the several centralized special contractual responsibility systems, more than 90 percent of the production brigades and production teams in the whole prefecture have taken care to successfully deal with centralized and contract relations. These production brigades and teams brought the effects of the collective machinery and the water conservancy facilities into full play, achieved a centralized plan for harvesting, ploughing and planting, and combined and centralized the resources of the people, machinery and livestock to supply water to the fields. The whole prefecture's labor force which has been utilized to the drought and to engage in planting now consists of more than 2.1 million people, over 1,100 motor vehicles, over 27,000 tractors, over 18,000 sprinkling irrigation machines and more than 42,000 water pumps. The Laiyang County Party committee has pooled the views of the masses, and since proposing plans for the commune members to complete the fall planting in the contract land, and ways to increase the collective's bearing the cost for the wheat planting but reverting the yield to the individual, the enthusiasm of the commune members to resist the drought and complete the planting has been running unprecedentedly high. As a result, more than 690,000 mu of the whole county's 750,000 mu of wheat had been planted by the 11th of this month.

In fighting the arduous battle to resist the drought and complete the planting, leading comrades in the Yantai Prefectural Party committee, after extensive investigations, have pooled the experience of the masses, and have proposed that the communes and brigades which have had water

source difficulties should as far as possible plant wide-furrow wheat in the latter period of the planting. This method is not only beneficial to the reform of the cropping system, but also enables two and three furrows to be combined into one, thus shortening the time gap between irrigation and fertilizer application. This method can also save on the use of water and ensure total spouting, thereby accelerating the pace of the wheat planting. In the whole prefecture, 6.46 million mu of wheat, constituting 80 percent of the planned area, had been planted by the 11th of this month. Besides continuing to resist the drought and accomplish the task of planting, and striving to complete the eight million mu of the planting plan, the vast numbers of cadres and masses are now beginning to resist the drought by filling the gaps with seedlings and by keeping a full stand of seedlings in the early planted wheat.

12267

CSO: 4007/55

DEZHOU PREFECTURE DIVERSIFIED ECONOMIC INCOME INCREASES

Jinan DAZHONG RIBAO in Chinese 13 Oct 82 p 2

[Article: "Major Efforts Devoted to Develop Diversified Economy Suited to Local Conditions; Dezhou Prefecture Diversified Economic Gross Income Between January and September Increases 32.7 Percent Over Corresponding Period Last Year"]

[Text] The Dezhou Prefectural Party committee and the administrative office have increased their understanding, strengthened their leadership, suited measures to local conditions and made the most of natural advantages, enabling the diversified economy to enter a new, highly developed phase. The gross income of the diversified economy of the whole prefecture from January up to September had reached 642 million yuan, a 32.7 percent increase over that of the corresponding period last year.

Since the Third Plenum of the 11th Party Central Committee, Dezhou Prefecture has actively and reliably readjusted its cottonfield acreage, has used cotton to promote grain, has realized an increase in production and has made a contribution in both grain and cotton. While continuing to maintain this increase in grain and cotton production, how can the cadres and masses be led to energetically develop a diversified economy with commune and brigade-run enterprises and with household sideline production by individual commune members? Since the latter half of last year, responsible comrades in the prefectural Party committee and the administrative office have successively led six groups of county Party committee secretaries and county magistrates to prefectures in our province which have rapidly developed diversified economies to observe and study, and having learned from the advanced, searched out the disparities, and integrated them with local realities, they have adopted the following measures: (1) To increase understanding and rectify the position. The prefectural, county and commune Party committees have all made the development of a diversified economy an important part of their agendas. Using the greater part of their time and energy last winter and this spring to investigate and study the problems of accelerating the development of a diversified economy, the principal responsible comrades of the prefectural Party committee have gone down into the counties, communes and households to investigate and sum up their typical experiences in developing such things as industrial sideline production, the raising of

chickens and rabbits and the growing of flowers and vegetables, and have extended them to the whole prefecture. Ningjin County has established special leading groups to enrich and increase the strength of the leadership. In every commune in the county and in 70 percent of the production brigades, the principal responsible comrades have personally stressed a diversified economy and commune and brigade-run enterprises. A three-level cadre conference on commune and brigade-run enterprises and on a diversified economy was specially convened in the county this May to sum up experience, affirm achievements, define duties and implement policies, enabling the entire county to enter a new, highly developed phase in a diversified economy and in commune and brigade-run enterprises. Seventy nine production brigades which previously had been lacking in industrial sideline enterprises began to organize them, and 32 brigade-run industrial sideline enterprises which had been disbanded also resumed operations. In the first half of the year, the gross income from the diversified economy had increased 20 percent over that of the corresponding period last year. (2) To suit measures to local conditions, make the most of natural advantages, stress essentials, make breakthroughs and spur on the development of a diversified economy. The focus of development of the prefecture has been determined according to its actual conditions and natural advantages. There have been new developments in planting with emphasis on afforestation. Since last winter and this spring, the afforested acreage has been increased 180,000 mu, 37 million trees have been widely planted, and 34,000 acres of seedlings have been raised. Animal husbandry has also developed rapidly with emphasis on large livestock. By the end of June, the number of large livestock in the entire prefecture had increased to 390,000 head, amounting to 97.5 percent of the annual plan of 400,000, an increase of more than 60,000 over that of the corresponding period last year, and the number of sheep raised had surpassed 2.4 million, a 20 percent increase over that of the corresponding period last year. There has also been a fairly rapid expansion in the construction materials industry. The number of commune and brigade brick and tile kilns in the whole prefecture has currently reached 259, a 21 percent increase over that of the corresponding period last year. (3) To further implement policies, establish and perfect the system of job responsibility, arouse the enthusiasm of both the collective and individual commune members and promote the development of a diversified economy and commune and brigade-run enterprises. In line with local conditions, the majority of communes and brigades in the prefecture have now popularized different forms of the system of responsibility such as large-scale assignment, proportional sharing, above-quota profits sharing and piece meal wages. These efforts have had a major effect on promoting a diversified economy and on developing commune and brigade-run enterprises.

12267

CSO: 4007/55

JINING PREFECTURE ASSIGNS AGRICULTURAL TECHNICIANS TO COMMUNE LEADING POSTS

Jinan DAZHONG RIBAO in Chinese 12 Oct 82 p 1

[Article: "Jining Prefecture Increases Front Line Agricultural Strength; 476 Agricultural Technicians in the Prefecture Are Promoted to Commune Leading Posts"]

[Text] Since the Third Plenum of the 11th Party Central Committee, the Party committees on all levels in Jining Prefecture have regarded replenishing and strengthening commune leading groups with selected cadres who have specialized agricultural skills as a vital task in accelerating agricultural development. The Party Committee on all levels have successively assessed the proficiency of the whole prefecture's nearly 1,000 specialized high school and college graduates and skilled cadres who are in front line production. Based on the principle of "making arrangements for the ones when they are ready", the committees have promptly selected for commune leading posts those personnel who consistently did well, had strong professional skills and also had the unfailing confidence of the masses. There are already 476 agricultural technicians who hold commune leading posts.

Since moving up to leading posts, this group of specialized technicians has made preliminary changes in the "three more three less" phenomenon which had commonly existed in the commune leading groups in the past. For example, more skilled professional than skilled cadres more engaged in administrative work, less in understanding technical management; and more leaders with generalized knowledge and few with practical specializations. The specialized cadres selected from the whole prefecture's 141 commune leading groups represent 43 percent of the total number of cadres, thus enabling a marked rise in the educational level. As a result, this approach has not only aroused the enthusiasm of agricultural scientists and technicians, but also strengthened the leadership of agricultural science and promoted the development of general scientific activity and scientific planting. Of the eight members of the Jiaxiang County Tuanli Commune Party committee, two are assistant agronomists, and the rest are production experts. In the last two years, they have consciously strengthened the leadership of scientific and technical work, have established general scientific organizations at every level in the commune and in 51 production brigades and 259 production teams, have used

methods such as giving technical lectures over the radio, printing and distributing scientific and technical pamphlets, conducting technical training classes and establishing mobile technical advisory offices. They have spread scientific planting know-how and have also trained 750 scientifically and technologically specialized households among the commune members. As a result, mass-oriented scientific planting standards have clearly improved in the whole commune, and agricultural production has developed fairly rapidly. Last year the whole commune had realized "three increases and one raise": compared with that of 1978, grain output had increased 217 jin per mu; cotton output had increased 69 jin per mu, economic income had increased 2.4 times and the income of the commune members had been increased from 43 to 174 yuan. This year the per unit area yield of more than 40,000 mu of single cropped wheat has again increased 11 percent over that of last year, and the total yield has increased 10.6 percent. Currently 95 percent of the communes in the whole prefecture have already established general scientific organizations, and the mass-oriented activities in which the premise is that to study science is to apply science presented a new scene.

This group of leaders is educated and skilled, uses science to direct production and is able to work in accordance with objective economic and natural laws. Since assuming the office of Sishui County Shengshuiyu Commune Party committee secretary, the 37-year-old agricultural technician Liang Qiyi has seen huge success by focusing on the special characteristics of the mountain areas and hills that are suitable for peanuts, and fruit trees. Last year the per unit area yield of the whole commune's nearly 10,000 mu of peanuts had increased from the original 200 jin to 280 jin. Even with reduced planting acreage, the commune's grain output still reached an all-time high. At the same time, implementing the mountain and forest policies, the whole commune had afforested 2,500 mu and planted 900,000 fruit trees, thereby generally achieving the goal of developing in agriculture and forestry simultaneously and raising its living standards gradually. Baishi Commune of Wenshang County used to be poor mountainous area with its natural conditions substandard and economic foundation weak. But since Zhang Zhongjian has been commune Party committee secretary for a little over a year, and through investigation and research, has proposed a production plan: "If Baishi Commune wants to become wealthy, it must first grasp agriculture and then forestry, always grasp animal husbandry, and give the barren hills and lands to each household, and make great headway in production and living standards. Because the experts were in charge, the reserves of manpower, material and financial resources were relatively well tapped thus promoting the development of household breeding and industrial sideline production. According to the statistics for the first half of this year, the income from the diversified economy of the whole prefecture has reached 500 billion yuan, a 36 percent increase over that of the corresponding period last year.

12267

CSO: 4007/55

SHANXI

BRIEFS

GINNED COTTON OUTPUT—As of 12 December, Shanxi Province's Yuncheng Prefecture had procured 127,154,900 jin of ginned cotton, overfulfilling the procurement task by 45 million jin. [Taiyuan SHANXI RIBAO in Chinese 14 Dec 82 p 4 SK]

CSO: 4007/70

NPC DEPUTY ON CHANGING COMMUNE SYSTEM

OW210739 Beijing Domestic Service in Mandarin 1200 GMT 14 Dec 82

[Text] (Gao Weilong), NPC deputy and Wenjiang prefectural party committee secretary, from Sichuan Province, said at a group discussion meeting of the Fifth Session of the Fifth NPC that changing the system of integrating government administration with commune management in rural people's communes will strengthen the building of political power of rural grassroots units and facilitate the development of collective economy. (Gao Weilong) said: Guanghan, Xindu and Qionglai Counties in Wenjiang Prefecture have already reformed rural structure on a trial basis and established township governments. A people's commune is just a form of organizing the rural collective economy. It assumes leadership over agriculture-industry-commerce joint companies and develops agricultural production, enterprises run by local people and a diversified economy.

Seed, plant protection and farm machinery companies have been established in the counties, and stations of the same nature have been established in the townships. Agriculture-industry-commerce joint companies have been set up in some places, where various forms of economic association have been adopted to facilitate the development of the collective economy. Guanghan County has reformed the system of integrating government administration with commune management. It has strengthened the building of political power on the one hand and boldly reformed economic systems on the other. It has also instituted an overall responsibility system of fixed quotas, contracting and incentive in agriculture, industry and commercial sectors and thus markedly promoted industrial and agricultural production. In 4 years, the county's annual total value of agricultural and industrial production doubled to some 420 million yuan from some 210 million yuan in 1978. The economic situation this year is even more promising.

(Gao Weilong) said: At present, we still lack experience and there are shortcomings in many areas. Through the study and implementation of the new constitution, we should strive to do a better job in reforming the rural structure.

CS0: 4007/70

BRIEFS

COLLECTIVE ECONOMY--Since the third plenary session of the 11th party Central Committee, Tianjin municipality has vigorously developed the urban collective economy in line with its practical situations. By the end of October, newly built urban collective economic units totaled 5,600 in number with some 210,000 persons employed by the units. Of these employees, 70 percent are job-waiting youths. An urban collective economic network, including 2,700 enterprises, 50 production and processing categories, 2,800 commercial outlets and 20 social service trades, now has begun to be established. According to incomplete statistics compiled in eight districts, in 1981 the urban collective economic units gained a total of 2.8 billion yuan of income and 45 million yuan of net profits and handed over 10 million yuan of tax to the state. [Tianjin TIANJIN RIBAO in Chinese 21 Nov 82 p 1 SK]

DIVERSIFIED ECONOMY--Through 5 years' hard work, Jinghai County, Tianjin municipality, has gradually created a new situation in which the diversified economy rapidly develops and the rural economy becomes more prosperous each day. Despite 4 years of drought, the county's industrial and agricultural output value is estimated to be 330 million yuan this year, quadrupling that of 1977. Since 1978, the county has reduced the grain-growing acreage and increased the area planted to cash crops. In the past 5 years, total output of oil-bearing crops reached 99.6 million jin. [Tianjin TIANJIN RIBAO in Chinese 22 Nov 82 p 1 SK]

CSO: 4007/70

CIRCULAR ISSUED ON BUILDING HOUSES ON FARMLAND

HK101036 Kunming Yunnan Provincial Service in Mandarin 1100 GMT 9 Jan 83

[Text] The Yunnan Provincial CPC Committee and people's government jointly issued a circular on 3 January calling on party committees and governments at all levels to seize the opportunity of the high tide of building houses in rural areas around the Spring Festival, organize an inspection on the arbitrary occupation of farmland for building houses and adopt measures to put an end to this unhealthy trend.

Following are the specific demands of the circular jointly issued by the provincial CPC committee and people's government:

1. Party committees and governments at all levels must pay high attention to the serious consequences resulting from the unhealthy trends of building houses by arbitrarily occupying farmland and indiscriminately destroying forests. They must be determined to strictly control the building of houses on farmland. It is necessary to educate cadres and the masses in rural areas to utilize the current housing sites and open spaces and to build their houses in a compact, suitable and tidy place. On no account are they allowed to encircle land at their will and to occupy cultivated land and particularly to occupy good land or open spaces in building houses.
2. From now on, the provincial, prefectural, autonomous prefectural, municipal and county levels must organize forces to inspect the problem of houses built on farmland in the past few years. The focus of inspection must be on the barren areas of the hinterland and particularly in towns and villages where population exceeds average amount of land.
3. All localities must grasp typical cases of illegally seizing farmland and especially grasp the cases of serious violations of the law committed by some units and cadres. Each of the cases must be appropriately handled in order to educate the masses and the persons who commit the mistake. They must not be accommodated. As for those who extort money by utilizing land, offer or accept a bribe and illegally resell land, they will be charged with economic crime or with undermining the public property of socialism. It is necessary to investigate and affix responsibility for the crime according to law and we must not be softhearted. Those who have done this well must be praised.

4. On the problem of building houses in rural areas in the future, all prefectures, autonomous prefectures, counties and communes must observe the principle of using less land, rationally distributing it and ensuring that the land is convenient for the work and life of the masses. In accordance with unified arrangements, fixed quotas must be worked out for the occupation of land in housing construction every year, must be submitted to concerned departments for approval and must be strictly carried out. Rural housing construction must be undertaken only within the range of the stipulations and quotas and must be approved by the concerned departments. No land must be occupied and houses built without unified planning and without the approval of the authorities. For the next few years, rural housing construction must no longer not occupy farmland.

5. Party committees and governments at various prefectural, autonomous prefectural, municipal and county levels must appoint a leading cadre to be in charge of the inspection work and must organize forces of departments concerned to conduct the inspection in accordance with the spirit and focal point of work mentioned above.

The provincial CPC committee and people's government have decided to appoint Comrade Lin Chao, vice governor and chairman of the provincial building commission, to be in charge of this work and have resolved to release comrades from the departments concerned of the rural work department of the provincial CPC committee, the provincial planning commission, the nationality work department of the provincial CPC committee, the provincial peasant association, the provincial agricultural commission, the provincial building commission, the provincial agricultural department, the provincial judicial department and so on to form two inspection groups and to conduct focused inspections in the areas of south and west Yunnan, respectively.

CSO: 4007/70

BRIEFS

SURPLUS GRAIN PURCHASE--By 15 December 1982, 88.8 percent of the province's plans for purchasing surplus grain were already fulfilled, a 3.6 percent increase over the same period last year. Qujing Prefecture, Kunming municipality, Yuxi Prefecture, Diqing Prefecture, Dongchuan municipality and 52 other counties have fulfilled or overfulfilled their purchasing tasks. In addition, Yuxi Prefecture, Simao Prefecture, Dali municipality and 28 other counties have overfulfilled the whole year's plan for advance purchases of grain. [HK301418 Kunming Yunnan Provincial Service in Mandarin 1100 GMT 23 Dec 82]

CSO: 4007/70

ZHEJIANG

BRIEFS

BEEF CATTLE--As of the end of November, Zhejiang Province had procured 5,514 beef cattle, overfulfilling the annual procurement plan by 10.3 percent. At present, Hangzhou municipality has 350,000 jin of beef in stock, more than double the same period last year. [Hangzhou Zhejiang Provincial Service in Mandarin 1030 GMT 31 Dec 82 OW]

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